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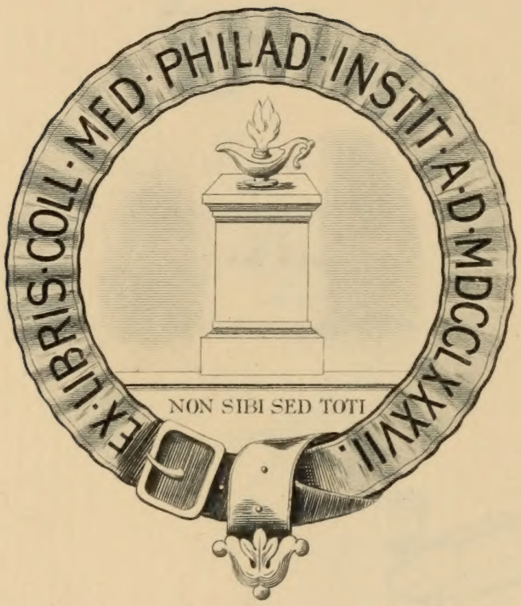

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ALBANY
MEDICAL ANNALS.

Journal of the Alumni Association of the Albany Medical College.

EDITED BY

ANDREW MAC FARLANE, M. D.,

AND

J. MONTGOMERY MOSHER, M. D.

VOLUME XIX.

'Ασφαλὲς καὶ ἔμπεδον ἔστω τὸ
σὸν ἕδος. 'Εκ σκότου μὲν ἔξαγε
φάος, ἐκ δὲ πάθους ἀναψυχήν.

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ALBANY MEDICAL ANNALS

Original Communications.

THE VARIATIONS IN THE RELATIONS OF THE VERMIFORM APPENDIX FROM THE STANDPOINT OF EMBRYOLOGY.*

BY JOSEPH DAVIS CRAIG, A. M., M. D.,

Adjunct Professor of Anatomy, Albany Medical College.

It seems almost essential in introducing any paper upon any subject pertaining to the structure, relations or pathology of the vermiform appendix, at this late day, to offer an apology for the further consideration of any one of the details in regard to an organ whose functions and surgical manipulations have held so conspicuously in the keenest interest the professional mind through the last few years. The great body of physicians seem now to regard the discussion as about closed, and feel that everything has been said upon this subject that can be said in the thousands of books and pamphlets and magazine articles which have marked the investigation, development and perfection of this most interesting branch of surgical art.

Epochs in political history follow each other only after long periods of years; in medicine and surgery, through the last century, issues of the greatest consequence to human life have been determined, and events of momentous importance to the welfare of the community have succeeded each other with a rapidity which is bewildering. And so, as a new epoch in the art of medicine is beginning to unfold even before humanity has reaped the full fruition of the old, the interest of the medical profession is being markedly diverted from the further consideration of the anatomy and pathology of the vermiform appendix, and intensely centered in the progress and result of the endeavors to procure and properly apply protective antitoxins in the various zymotic diseases. The popularity and efficiency of the use of antitoxins in specific diseases is growing with great rapidity, and their results bid fair to rival, if not excel, any of the brilliant rescues from impending death that have so often been the consequence of surgical interference with the diseased appendix. There seems to be no question now but that the healing art is to receive another wonderful exemplification in the antitoxin treatment of disease, as it only just now has witnessed in the triumph of the surgery of the diseased appendix, of the beneficent results to humanity of patient experiment, scientific precision and ceaseless industry when undertaken in thoroughly equipped institutions with ample endowment or under government control.

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* President's Address, Albany County Medical Society, read before the Medical Society of the County of Albany, N. Y., May 11, 1897, and before the Medical Society of the County of Ulster, N. Y., June 1, 1897. Ordered transmitted to the Publication Committee of the New York State Medical Society for publication in the transactions.

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Yet notwithstanding this tendency to turn the professional mind into fresher and more novel fields of investigation; notwithstanding all that has been said and written of the vermiform appendix; notwithstanding all that has been discovered in regard to its anatomy, physiology and pathology; notwithstanding an almost perfect technique in operative procedures which has lowered the death rate from an average above that of the so-called zymotic diseases to a fraction of one per cent.; notwithstanding all these things, there is much still to be desired, particularly in the knowledge of many of its anatomical peculiarities and physiological characteristics. Speaking for myself, I am not so sure that we really have demonstrated that the appendix is a vestigial remain, and it may perhaps be that this interesting little body may, after all, have some physiological use in the human economy in relieving in an emergency too great pressure in the caput colli from accumulated fœces. This is audacious and heterodox, I know, but these things are characteristics of the age. When the urachus ceases to be of further service, the lumen disappears, the elements of its walls become degenerated, and in a great measure absorbed, eventually leaving nothing but a rounded cord of connective tissue, at times so small as to be scarcely demonstrable. The gubernaculum testis, as soon as it has performed its particular service to the economy, loses its muscular structure, and before long entirely disappears. After the descent of the testicle, the serous canal through which it passes becomes, as a rule, obliterated, or remains only as a pathological menace. The muscles of a limb confined in a restraining dressing for even a few weeks show decided atrophy from lack of use, and if confined long enough, will lose their power of contractibility entirely. It seems to be the inevitable law that any organ of the body which is of no further assistance, if only to a small degree, in the consummation of vital processes, degenerates, and atrophies, finally to be demonstrated, if at all, as connective tissue with all its special functionating cells entirely obliterated.

It therefore seems strange to me that we persist in calling the vermiform appendix a vestigium, a remembrance of remote ancestors of a lower type, a useless member of the organism and a peril to its existence, when this body shows not the slightest tendency to follow the customary course of all organs that have served their day of usefulness in the human economy and persists, preserving all its elements in full physiological life. Its lumen is unimpaired; its mucous membrane is in full vigor, and differs not at all in quality and arrangement of tissue from the similar structure of the large intestine; it has the two muscular coats common to hollow viscera in full development, with an internal circular coat ready, by its vermicular action in normal states, to expel any temporary foreign particle which might have eluded the watchfulness of Gerlach's valve; it has its covering of peritoneum and its meso-appendix, partaking of the characteristics of similar structures elsewhere in the abdominal cavity, and it has a blood supply ample for all its needs. If the appendix is a rudimentary organ, where will you find another remnant of past usefulness which preserves in full energy its old-time functional activity? Because the appendix is perhaps an organ of very small physiological importance, and one which the organism can get along without, it does not follow that it is but a rudiment. The little toe is an organ of very small physiological importance, and one which the organism can get along without, and a nuisance when it has a clavus on it, yet no one claims this little digit as a rudiment either for these reasons or because it is not as long or as broad as a monkey's. Some one has advanced as an argument as showing the tendency of the vermiform to degenerate, that the adenoid tissue in its mucous membrane in early life almost entirely disappears as old age approaches. This does not seem to me to be a valid argument. For we know that what is true of the adenoid tissue of the appendix as years go by is also true of this type of tissue wherever it appears in other portions of the body. The tonsils shrink after the period of puberty, largely from the loss of adenoid tissue, and in like manner these lymphatic structures largely disappear from both the large and small intestines. In speaking only for myself, it is my belief that the appendix is not a rudiment. It is an organ functionally useful to a small degree in the mechanism of digestion, whose exact use has not been demonstrated.

The elements of structure of the appendix, that is, its lumen, mucous and muscular coats, do not, in different cases, differ in any decided respect from type; neither does the peritoneal investment, except as to the extent to which it covers its walls. Its attached portion or base is pretty constantly found behind the head of the colon and just below the ileo-cæcal valve, and yet in a considerable proportion of cases the base of the appendix approximates the most dependent surface of the cæcum, or, in rare cases, may be found in front of it. All this, of course, is a matter of general professional knowledge.

While the elements of which the appendix is composed are fairly constant in their quality and arrangement, it is in its relations with surrounding structures that the widest departures from type are found. The variations in the attachment of the base of the appendix, and the decidedly different relations of its body with neighboring parts, are best understood when considered from the standpoint of embryology. And because this particular method of considering the relations of the appendix and its results is not a matter of common professional knowledge, I have been induced to present this subject to-night from a point of view which will perhaps be new to some of you.

In the first place, the variations in the relations of the appendix are complicated by very marked and frequent departures of the peritoneal coat from what may be considered a typical or common arrangement. The serous membranes, not only here, but wherever found throughout the body, are a most interesting study, even when considered by themselves, and there is no class of structure with which I am familiar that show so great a tendency to fail in their conformity to type. In fact, I scarcely remember an examination of any serous sack that in all details answered the description usually found in works on anatomy. The simplest of them all in arrangement, and the least frequent to depart from type, are the pleuræ. This is of course because the surfaces of the lungs are comparatively smooth, and are not broken by many inequalities or complicated arrangement of organs which are to be covered by serous membrane. Then follow with a little more variety of arrangement, because of a more complicated arrangement of tissues, the vaginal sheaths of the tendons of certain muscles, and the lining membrane of the joints. After these come, in the order of complexity of arrangement, the tunica vaginalis testis, the pericardium, and, last of all, the peritoneum. So as the viscera which these serous membranes cover become more complicated, in equal proportion does the variation in arrangement become more involved. About the vessels at the base of the heart the pericardium may form any degree of investment from a perfect vaginal covering to a slight relation only on a single aspect of their walls. In the same way the peritoneum will show the greatest vagaries. Thus the ascending and descending colons may be so completely surrounded, on the one hand, by a serous covering so abundant that not only will they be completely surrounded, except for a narrow space behind, but also at times a very wide meso-colon attaching them only to the posterior abdominal wall may permit of very extensive movements laterally. Such serous covering, on the other hand, may be so limited in extent that only the anterior and part of the lateral walls of these two colons may be invested. It is only by means of such a long meso-colon on the right side that the appendix is ever found in the neighborhood of the left iliac fossa. After the same manner the peritoneum will be related to the appendix. Whatever its position, except when in the cellular tissue behind the cæcum and colon, whether to the right side, or the left, or below, the serous covering may be so generously applied that a very wide and ample meso-appendix may result, or only a very limited investment may be found in front. Appendices with an ample meso-appendix, which, as a rule, will be sickle shaped, but at times have a very wide edge, posteriorly placed, and firmly united to the abdominal structures behind, can be extended to their full length on traction at their apices, or not depending upon whether or not the peritoneal investment has kept pace in its growth and adjustment with the developing cæcal adjunct.

I have examined a good many appendices in the dissecting-room, and have observed this rule in regard to the relations of the vermiform with the peritoneum, that in those cases in which the appendix is to the left of the cæcum there is found the greatest tendency to the formation of a complete meso-appendix, while in those quite numerous cases in which normally, as it would seem, there is a tendency to the right side, the peritoneum holds a relation only with its anterior wall. Of course, an appendix lying in the cellular tissue behind the colon is without peritoneal investment.

It is impossible, I think, to clearly and thoroughly understand the very many varieties of position of the appendix unless we have some general idea at least of the manner in which the appendix is formed, its original position, and its line of movement from its place of formation to its final and more common adult relation on the border of the pelvis on the right side. While such information is in the possession of those dealing specially with the pathology of the appendix, it is not a matter of general professional information. Embryology furnishes us the key by means of which we can explain many, if not most, of the curious relations of the vermiform appendix. It ought to be remembered in the beginning that the original fœtal peritoneal investment of the appendix is not its secondary or final one. The peritoneum has the power of constantly adapting itself to the shifting and growing organs over which it lies. The appendix and cæcum seem to slide, to use such an expression, under the peritoneum, causing an elevation, as they travel onwards, of the serous membrane in front of the advancing body, and a recession of the same membrane behind it.

The digestive tract is originally developed from a straight tube, which is placed posteriorly and vertically in the abdominal cavity, and is held to it by a primitive fold of peritoneum, forming an original meso-gaster, mesentery, meso-colon, etc. From this time onwards to the period of full development the digestive organs retain to a greater or less degree an investment of serous membrane. The original straight mesially and vertically placed digestive tube soon changes its relation and bends forwards at about its center, which at this point has remained partly open to eventually form the vitelline duct, which duct passes out of the abdominal cavity through the umbilicus by a short stem. (Fig. I.)

The vitelline duct is, as is well known, but a temporary structure, and as a rule disappears entirely. Occasionally, however, a part remains, develops with the intestinal canal, and appears later as a dilatation of the wall of the small intestine twelve or eighteen inches from the ileo-cæcal junction. It is commonly known as Meckel's diverticulum. This vitelline duct, or the summit of the anteriorly bending primitive digestive tube, is now located at the umbilicus. Just below it a dilatation appears, which dilatation eventually forms the cæcum and vermiform appendix. All portions of the tube above this point will, as it now rapidly increases in length, form the stomach, duodenum, jejunum and ileum, while all portions below will form the colons, sigmoid flexure and rectum. From this it is seen that the original site of the appendix is just below, and very shortly afterwards a little to the left of the umbilicus. This dilated portion of the tube becomes, as the embryo develops, very much enlarged and elongated. As a rule, in herbiferous animals development never proceeds beyond this point; there is no differentiation of an appendix, and the cæcum remains a simple, large, elongated organ. In the human embryo, however, the distal end of this primitive cæcum becomes

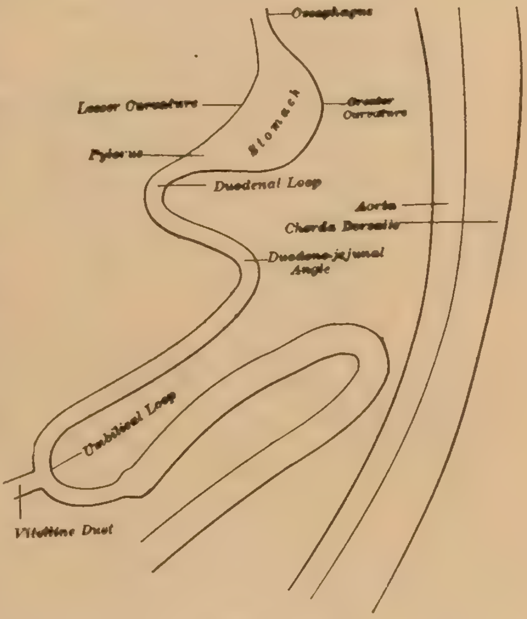

Fig. I.

(from Gray, after Dexter.)

gradually contracted to form the vermiform appendix. Of course, the length of primitive cæcum so contracting will determine eventually the length of the appendix. In at least four cases on record this contraction failed to take place, and no appendix developed.

At this time the appendix and caput-colli are entirely surrounded with peritoneum. The development of a meso-appendix occurs later. The cæcum, which can very early be differentiated from the appendix, dilates above the point of attachment of the two bodies, and the character and extent of this dilatation, together with its location on one or the other of the walls, will determine the position of the appendix in relation to it. Should the dilatation occur on the posterior wall, the base of the appendix will arise from perhaps the rarest of all positions in front of the cæcum; should the enlargement take place anteriorly, as it most commonly does, the appendix eventually has an attachment to the posterior wall; should the dilatation be on one or the other of the lateral walls, the appendix will arise from the inferior aspect of the cæcum. If there is but little if any tendency to enlargement, the appendix will not only arise from the inferior aspect of the cæcum, but will also conform to the fœtal type. Combinations of these simple dilatations will produce an infinite variety of relations of the appendix and cæcum. It is most usual for the anterior and right lateral wall to dilate, thus causing the commonest origin to be found behind and a little to the left of the cæcum. (Fig. II.)

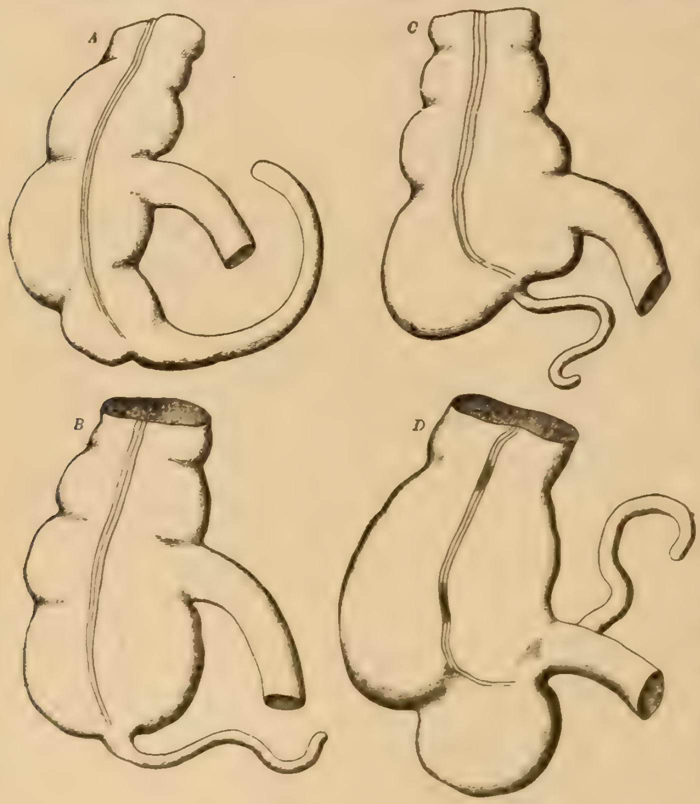

FIG. II.

(FROM GRAY AFTER TREVES.)

As I have already said, all the portion of the intestine lying above the dilated primitive cæcum forms the small intestine, and lies to the right side of the abdominal cavity, while the portion below lies to the left side, and enters into the formation of the large intestine.

Soon after the formation of the cæcum and appendix a remarkable rotation takes place along the digestive tube around an axis formed by the superior mesenteric artery. (Figs. III, IV.)

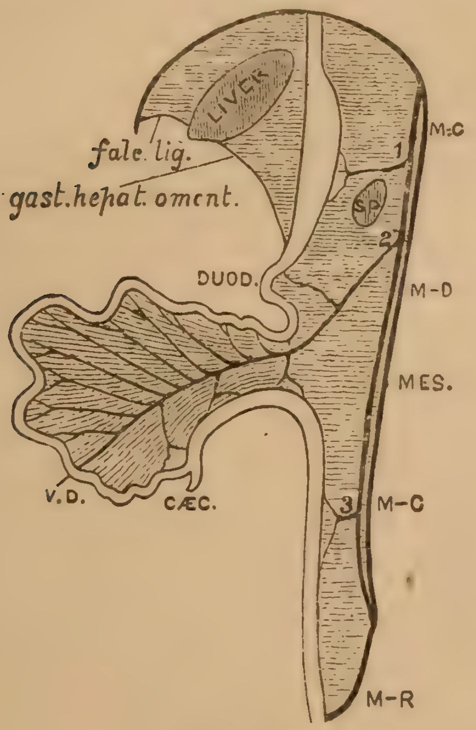

FIG. III.

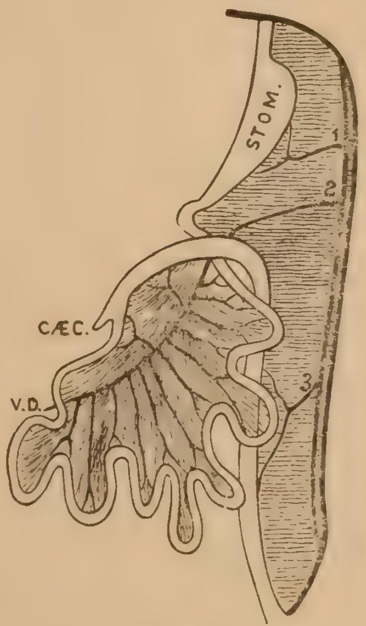

FIG. IV.

(FROM MORRIS.)

And when completed the small intestine is found to occupy the center of the abdominal cavity and the larger intestine to form a loop around its upper and later borders. (Fig. V.)

To accomplish this the vermiform appendix first travels upwards and to the left from its original point of formation, just below and to the left of the umbilicus, towards the diaphragm, upon approximately reaching which it turns to the right side under the spleen, forming the splenic flexure of the colon as it goes. (Figs. VI and VII.)

The appendix then continues to progress transversely across the epigastrium to the under surface of the neck of the gall bladder, where it turns downwards, thus forming another curve, the hepatic flexure of the colon. Finally passing down the right side, the ascending colon is formed behind it, and at last reaches its destination in the region of the iliac fossa. As this last descending movement occurs, a trifling variation to one or the other side will cause the cæcum, and with it the appendix, to move outwards to the iliac fossa on the one hand or beyond the pelvic brim on the other.

Or should the movement stop short of its usual length, or be continued beyond it, the cæcum and appendix will finally rest high up in the false pelvis on the one hand, or descend into the true pelvis on the other.

Combinations of the lateral and vertical varieties will determine also an infinite number of positions for the cæcum. Supposing, as sometimes, though rarely, happens, the process of advance is arrested at some point in its course from the location of its formation about the umbilicus to the iliac fossa. Wherever this occurs there will be found the cæcum and appendix. So that an appendix, by reason of an arrest of full development, might be found at times under the liver or high up in the abdomen towards the left side.

I cannot understand, from the above reasons, how an appendix can be found in the neighborhood of the left iliac fossa except in those cases where a very long meso-colon on the right side permits it.

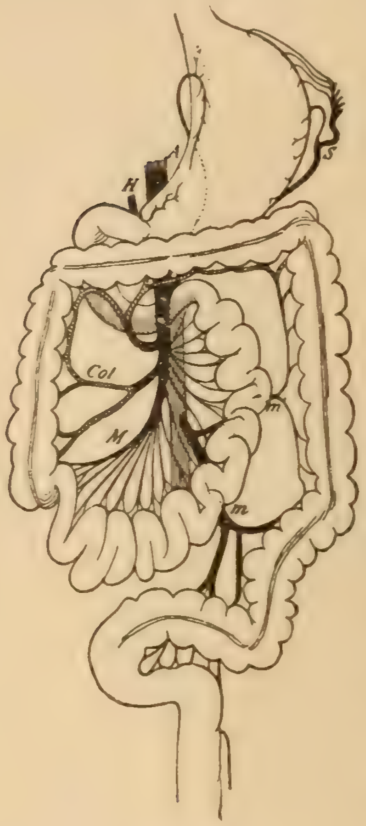

FIG. V.

(FROM GRAY, AFTER JONNESCO.)

Appendices departing remarkably from the right iliac fossa are of interest, however, more as curiosities than anything else, for they are exceedingly rare. I have been searching very diligently for an appendix approximating the left side, or for one high up towards the under surface of the liver, but without success. Perhaps a hun-

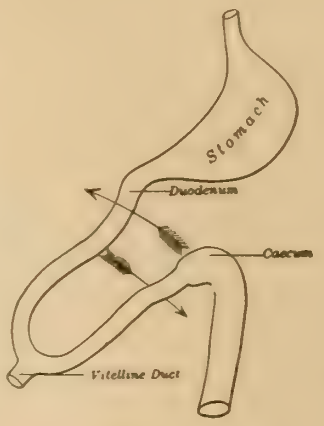

FIG. VI.

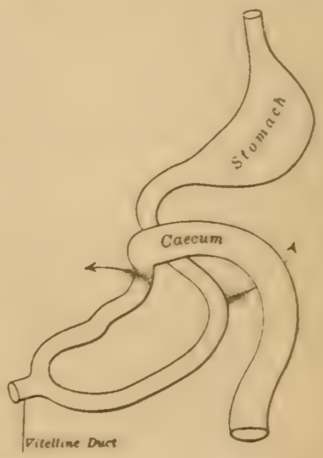

FIG. VII.

(FROM GRAY, AFTER JONNESCO.)

dred or more subjects have been examined. Either of these conditions must be exceedingly unusual, and Fowler's three cases of left-sided appendix (or appendicitis) must, one would suppose, have been cases in which the appendix was pulled over to the left side by pathological adhesions.

Just one point more before concluding. The peritoneum does not always adjust itself completely to the slowly growing organs with which it is related. It is easily understood, I think, after a moment's reflection, how it is that the appendix held by a layer of peritoneum to a greater or less degree will, if the peritoneum develops to an equal degree with the appendix, permit of its elongation on traction to its fullest extent; while should the serous membrane not so develop, the appendix will be variously curled and folded upon itself. It is for the same reason of a lack of a complete adjustment of the peritoneum that the appendix, as it descends from the region of the liver, shows such a marked tendency to point upwards and not downwards, as it would do if, being free, gravity alone influenced its position. As the appendix descends its position behind or to the right or left side of the cæcum will be determined in part by the relative dilatation of the walls of the caput colli, and in part by the influence of the peritoneum.

From what has been already suggested in this paper, it will be seen that the relative position of the appendix in the body, and its relation to the peritoneum, is determined almost wholly by embryological considerations.

The cæcum may for convenience be said to be found normally (that is, in the great majority of cases) resting on the psoas magnus muscle at the brim of the pelvis, on the right side and about its center. The base of the appendix in the same way may be said to be found nominally behind and towards the inner side of the caput colli. In a very large percentage of cases, for reasons in great part embryological, the cæcum and appendix will depart from their normal positions. The influences which are at work to produce these infinite varieties of the relative arrangement of the organs under consideration can be fairly classified or grouped as follows:

First. The variation will be influenced by the place at which the cæcum stops in the developing embryo in any region from the point of original formation below and to the left of the umbilicus, along the line of the transverse and ascending colons to the iliac fossa.

Second. The positions of the base of the appendix, below, behind, to the right or left, or even in front of the cæcum, will be influenced by the relative dilatation of one or more of the walls of the primitive caput colli.

Third. The relation of the body of the appendix will be determined as it descends in part by a vital tendency to either side of or behind the cæcum — and in part by the greater or less degree of firmness with which the peritoneum covering the appendix to a greater or less extent resists the vital forces which determine its descent under common physiological conditions.

Fourth. The mobility of the parts, as influenced by the reflections of the peritoneum about the ascending colon, forming in some cases a very wide meso-colon and in others none at all, will also determine a large number of variations.

Starting with these four conditions as determining the position of the appendix, an infinite variety of combinations may be formed, so that this interesting (even if a little hackneyed) body may be found in almost any region of the abdominal cavity, and may appear at times in a congenital umbilical rupture or in a right or left inguinal or femoral hernia.

I have purposely avoided statistical tables in this paper because its purpose was not so much to present new facts as to unfold, in perhaps a new light to many members of the society, especially those not engaged in special work, the manifold relations of the appendix as explained by embryology.

So many things have been abundantly demonstrated concerning the appendix, and so many tables of recorded facts are in existence, that I have thought it perfectly proper, without presenting them again at this late day, to rearrange some of them in the hope that this annual address of the President of the County Society might excite the interest of, if it did not instruct, some at least among its membership.

12 TEN BROECK STREET.

REPORT OF A CASE OF INVERSION OF THE UTERUS.

(RECURRENS.)

WITH REMARKS ON A NEW DEVICE FOR HOLDING IT IN NORMAL POSITION.*

BY WILLIAM E. SWAN, M. D.,
Assistant Resident Gynæcologist in Johns Hopkins Hospital, Baltimore, Md.

On May 7, 1893, the following case came under our observation in private practice: Mrs. H., aged 49, white, widowed, born in England, cook by occupation, married 19 years, widowed 15 years, 1 para, 16 years ago, labor not prolonged or difficult attended by midwife, up on the sixth day, no serious sequelæ, but has never felt well since. No miscarriages. Has suffered from profuse leucorrhœa, pain in the back and limbs, and a feeling of weight in the pelvis. Menses regular as regards time, duration and pain until birth of child; since then they have been very irregular, menorrhagia being a permanent symptom, although she denies having lost any considerable amount of blood at the time of her confinement or immediately subsequent to it. She has for a number of years been able to feel a round, hard body in the vagina, but did not seek medical aid, because, as she expressed it, she "supposed all women who had borne children suffered in this way."

General condition: Large, fleshy, robust looking woman, below average degree of intelligence; pulse, temperature, etc., normal. During the forenoon of the day we saw her she had carried some old boards from the back yard into the kitchen, which had required her to lift nearly to the limit of her strength. She had also walked down street twice, making a total distance of about one mile. About 4 P. M. she found it impossible to empty her bladder, and passed several hours on the closet straining herself severely in fruitless attempts to urinate. At length something suddenly gave way, causing sharp pain in the back, and some slight symptoms of shock, although she did not completely lose consciousness.

She was removed to her bed, where we found her some five hours later fairly comfortable, except a feeling of fullness about the bladder. On palpating the abdomen dullness was found for some three or four inches above the symphysis pubis. On attempting to make a vaginal examination my hand came in contact with a large rounded tumor entirely outside the vulva, which felt at first not unlike a child's head. On passing the examining finger into the vagina and around the thick pedicle of the tumor, this mass was found to start from the cervix. The cervical ring had almost entirely disappeared, and the uterine and vaginal mucous membranes were directly continuous. Upon ocular inspection this pyriform tumor was found to be the size of a small cocoanut (Fig. I); its tissues spongy and œdematous, its surface soft and downy. The two small lateral openings of the Fallopian tubes were remarkably distinct. The finding of these made it evident that I had to deal with a prolapsed and inverted uterus (Fig. II).

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* Preliminary Report read before the Northern Branch of the New York State Medical Association, June, 1893.

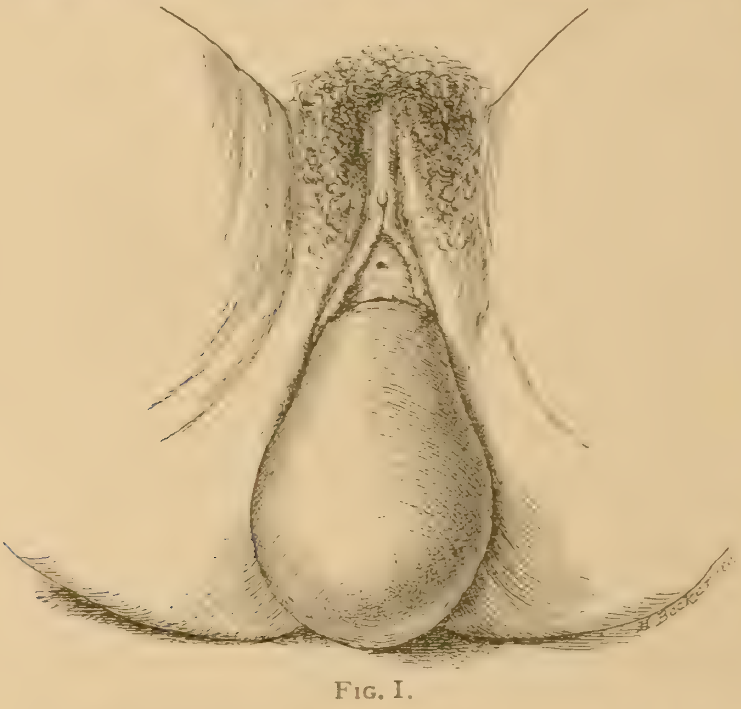

FIG. I.

I resolved to ascertain how much manipulation in the way of taxis the patient would bear without an anæsthetic, and at once began to reduce the inversion by first indenting one horn with my thumb and forefinger, then the other, following Nöggerath's method. The patient gave no evidence of pain or distress during these manipulations, and I continued to use considerable force until the complete reduction was accomplished, occupying in all not more than ten minutes. As the hand passed easily into the vagina, which was relaxed and capacious, the cervical ring could hardly be felt. The process of stretching had for the time so completely obliterated it as to make the uterine cavity feel as if continuous with the vagina. As soon as the uterus was replaced she involuntarily passed probably a quart of urine, much to her relief. The patient was instructed to keep on her back, bowels to be moved daily with small doses of Rochelle salts, and a vaginal douche night and morning of one-half gallon of hot water, with a drachm each of powdered borax, sulphate of zinc and powdered white oak bark to the quart. At the end of two weeks of this treatment we allowed the patient to get out of bed to see if she could get on without a supporter, but within three hours the inversion and prolapsus recurred, and was reduced in the same manner, with greater ease than before. We then adjusted an ordinary McIntosh uterine supporter, using the largest cup we could get, but this cup, notwithstanding its large proportions, 1½ inches in diameter, slipped into the posterior fornix, allowing the uterus to come almost out of the vagina, and

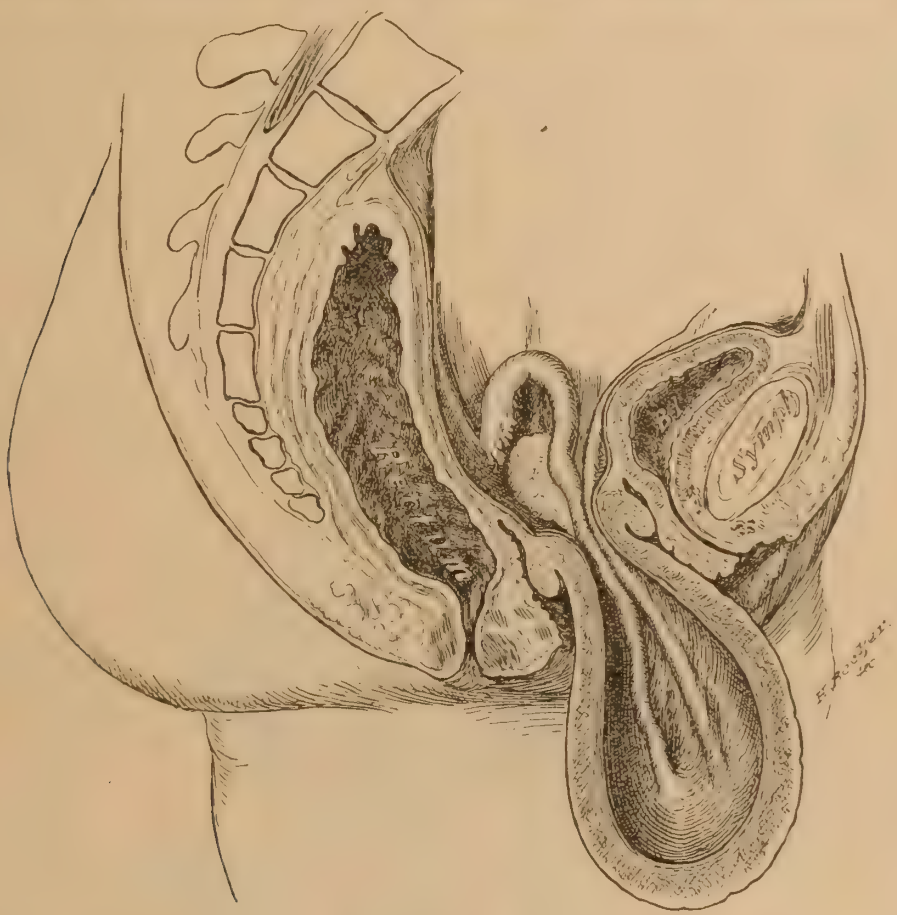

FIG. II.

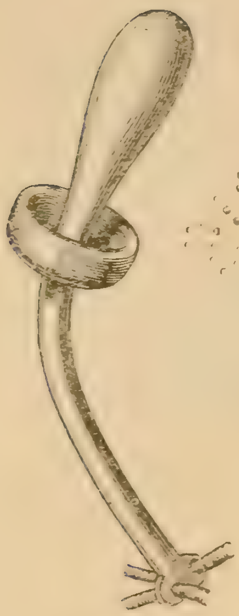

Fig. III.

irritated and excoriated the parts to such a degree that patient could not wear it. It then occurred to us that we might utilize in this case the principles of the intra-uterine stem pessary in conjunction with a McIntosh cup by adjusting an intra-uterine stem pyriform in shape, 3½ inches long and an inch in diameter at its greatest circumference, and attached to the cup of McIntosh's instrument by a screw joint (Fig. III).

We introduced this stem into the uterine cavity, adjusted the supporter as before, and allowed the patient to walk about (Fig. IV).

We have purposely delayed the publication of this case until the results of this mechanical treatment could be subjected to that crucial test which time alone enables us to apply to all new or unique methods of treatment. Soon after adjusting this apparatus to my patient — with the instruction to present herself from

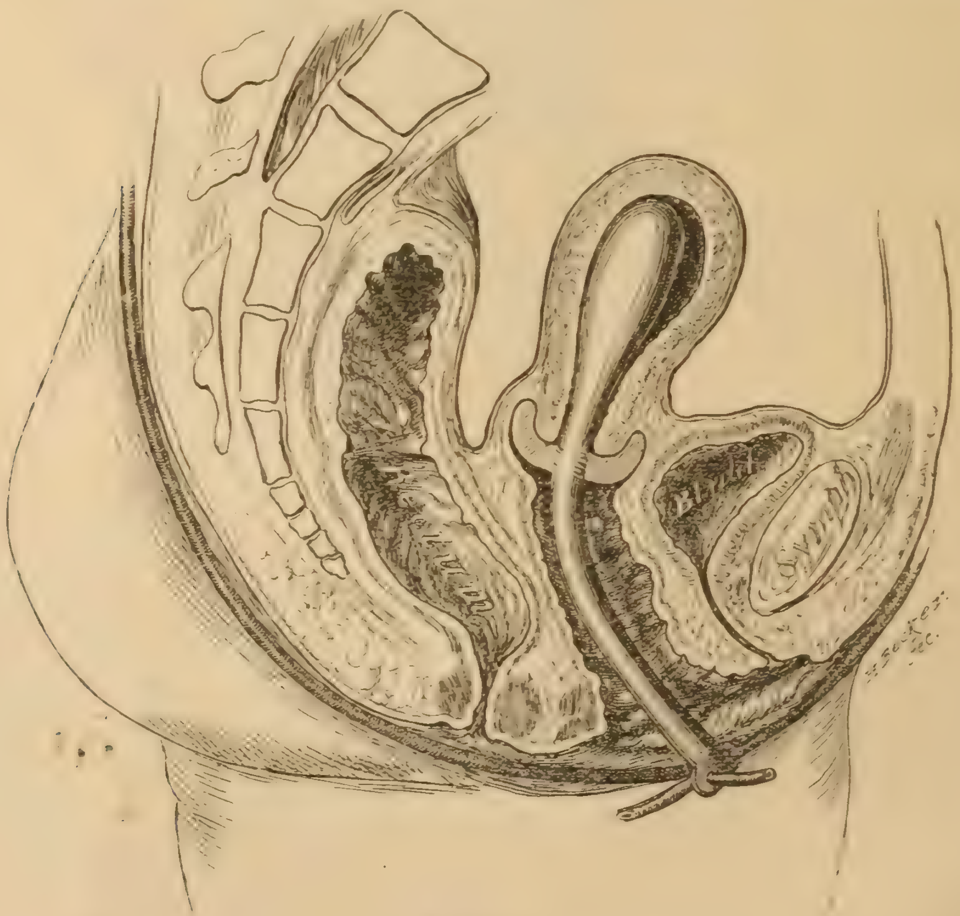

Fig. IV.

time to time for examination — she was lost sight of, and it is only since my return from Baltimore that we have been able to locate her. After some difficulty, she was found July 30, 1897, four years after the adjustment of cup and stem, and we are able to make the following interesting report of her condition.

She states that she wore the cup and stem for nearly a year without removing it, and without discomfort. She then removed it to adjust new rubber straps, and failed to re-introduce the stem, which she finally had removed from the cup, and has since used the cup alone, removing it daily, and has very little discomfort.

Examination. — Outlet enormously relaxed with prolapsing vaginal walls, especially the posterior, producing a large rectocele. We had much difficulty in locating the uterus, owing to the thick and rigid abdominal walls and relaxed vagina. The uterus was found to be very small (no inversion present), but evidently marked atrophy had taken place; it is freely movable and descends well into the vagina when patient makes expulsive efforts (Fig. V). From the above it is evident that in the course of four years our patient's condition has changed from one of complete inversion, with partial inversion of vagina, to one of simple prolapsus uteri, with markedly relaxed and redundant

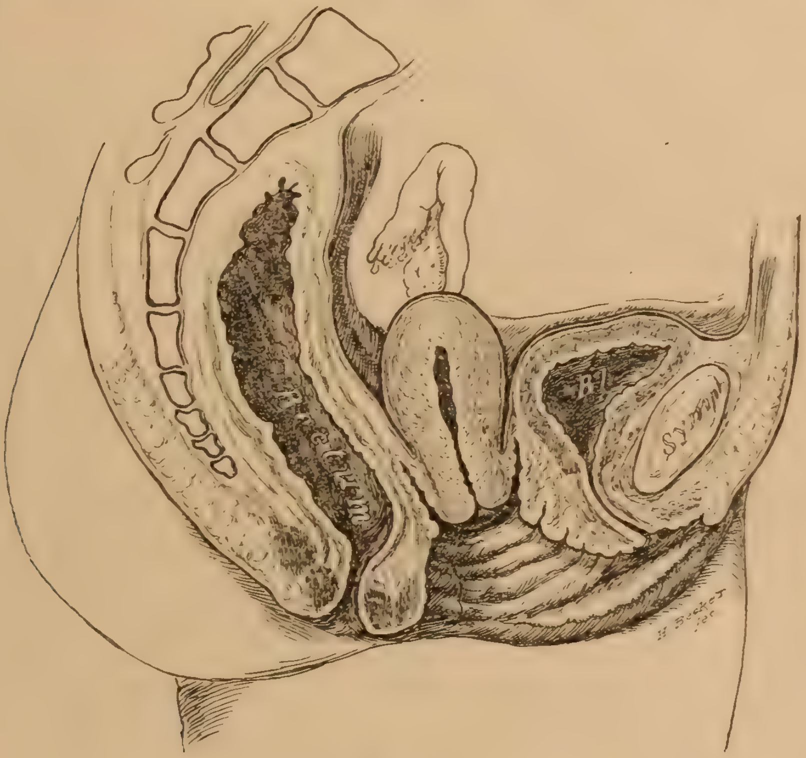

FIG. V.

vaginal walls, which a plastic operation on vagina and outlet, owing to the atrophied condition of the uterus, would be likely to cure. Just how much can be attributed to the stem in effecting this desirable change must remain a matter of speculation. It seems to us, however, not unreasonable to believe that the uterus was placed by reason of the stem and cup in the most favorable position for rapid contraction, possibly due to the irritating effects of this foreign body in its cavity, which passed on to involution, and finally atrophy. The patient then (unwittingly) followed up this advantage by removing the confessedly dangerous stem from its cavity, and still holding the now light but unsupported organ up with the cup alone, further aided nature in bringing about this cure of the inversion.

REGARDING THE RARITY OF THIS ACCIDENT.

While the usual form of inversion, either partial or complete, is admitted to be not especially uncommon, although, according to Beigle's[1] statistics, inversion occurs only once in 190,000 cases of labor, and up to 1889 but one case in 190,800 confinements had occurred at the Rotunda Hospital in Dublin.[2] Upon a hasty inspection of the literature of inversion of the uterus up to 1890, involving an examination of 650 separate articles by nearly 600 different authors, and a careful review of all papers on the subject since that date, we have been unable to find a single case similar to our own, or the mention of an intra-uterine stem in connection with the treatment of this lesion.

In connection with the ætiology of inversion of the uterus it may be interesting to note that out of 400 cases collected by Crasse,[3] of Norwich, Eng., 350 occurred in the puerperal uterus, and of the remaining 50, 40 were due to polypi.

The limits of this paper do not permit a full discussion of the subject of inversion of the uterus; but it is hoped a brief *resumé* of the various methods of effecting reduction of the inverted uterus may not be wholly devoid of interest.

Up to the year 1858 the reposition of inverted uteri may be said to have been limited to replacement within short periods after parturition. It is true that occasional cases had occurred in which chronic inversion had been overcome by taxis and pressure. Thus, one of the first mentioned[4] is by Columbat,[5] that the surgeon, Laborre de Benzeville, had effected the reduction as late as the eighth month, and Baudelocque after eight years. In 1847 M. Valentine[6] reduced an inverted uterus of one year's standing in ten minutes by taxis. In 1852 Mr. Cannay in some manner effected a reduction in five minutes; and a few months later M. Barrier[7] accomplished it in a case which had existed for fifteen months — but these successes held the position of accidental and anomalous feats in treatment, not that of systematic procedures.

It remained for Drs. Tyler Smith, of London, and James P. White, of Buffalo, N. Y., who were in this same year, 1858, each working, without the knowledge of the other, to reduce to a systematized and scientific method this operation of taxis, which before had only been practiced in a loose and desultory manner. In this year Dr. Smith reduced an inverted uterus of twelve years' standing by elastic pressure and taxis; and Dr. White one of about six months' standing by taxis alone. In that and the following year many successful cases of reduction were reported.

The various plans of treatment of inverted uteri naturally divide themselves into:

(*A.*) Methods for effecting gradual reduction, and

(*B.*) Methods for effecting rapid reduction.

Of the former we may mention that of

(*a*) Elastic pressure by vaginal stem and cup, or bulb.

This method dates back to Von Siebald,[8] and has recently been advocated by Drs. Hicks and Barnes, of London.

(*b*) Elastic pressure by vaginal water bag, combined with taxis. This method was first successfully employed in 1858, by the late Dr. Tyler Smith, of London, and the demonstrated fact that elastic pressure was capable of greatly aiding reposition of the inverted uterus marks an epoch in the history of this subject, and reflects great credit on its proposer.

(*c*) Bockendohl, of Germany, in 1860, proved that elastic pressure by means of the water bag could effect reduction of the inverted uterus unaided.

(*d*) Munde's method. Pass a Sims speculum and tampon around the uterus firmly with carbolized cotton soaked in glycerine, so as to keep it from slipping out of the line of pressure. Then introduce an India rubber bag and fill with water;

cut a strip of adhesive plaster 2½ inches wide and of sufficient length to extend from lumbar region between the thighs of the patient, and as high up as the navel. Two holes should be cut in it, one for the tube of the rubber bag to pass through, the other to leave the urethra free. After the bag is introduced into the vagina this strip of plaster is heated and attached to the skin. The bag may afterward be rendered more tense by pumping in water, or the amount of its contents may be diminished at pleasure by means of the stopcock. While the method is being carried out the patient should be kept in bed and all pain quieted by the use of morphine. The bladder should be kept empty by catheter, and the bowels, previously well evacuated, be kept constipated. (This plan might be advantageously combined with taxis.)

(*e*) A stream of cold water. Successfully used by Dr. Charles Martin.[9] Simply mentioned to complete the list. It has not been sufficiently tested to command confidence.

(*B*.) Methods for effecting rapid reduction.

(*a*) Rapid reduction by the old method of taxis. This is accomplished in two entirely distinct methods: (1) The manipulations of the operator are directed to the constricting cervix in order to overcome resistance there, and to return first the parts which last escaped. (2) These manipulations are directed to the fundus in order to return first the parts which escaped first. The first method is described by Capuron[10] as follows: If the orifice be not sufficiently dilated to allow the inverted portion to return easily the tumor is to be taken in the palm of the hand, with the fingers distributed around its pedicle in such a manner as to dilate the constricting cervical ring and to reduce first the portion which was inverted last, as if we were dealing with a hernia. This method is advised and practiced by Viardel, Aron, Bacqueral, M. Velpeau, and others.

The second method of taxis, well known as Nöggerath's consists not in manipulating the " constricted orifice in which the operator engages his fingers " so as to " dilate in advance the muscular fibres which oppose reduction," as Aron and Bacqueral express it, but in dimpling or indenting the fundus itself, so as to make of the indented or invaginated portion a species of wedge, which is forced into the cervical constriction. (This method should not be persisted in in chronic cases unless the cervical constriction shows a disposition to yield readily.)

The method is especially applicable to recent cases of inversion.

(*b*) Emmet's method.[11] This method consists of two separate and distinct procedures:

1. The whole organ is grasped with the hand in the vagina, the palm forcing the fundus up, while the fingers are separated to their utmost in the endeavor to dilate the cervical ring. At the same time the other hand exerts counter pressure on the ring through the abdominal walls.

2. When the uterus has been so far reinverted that the fundus is above the level of the os exterum, the lips of the latter may be drawn together with silver wire sutures, and the further progress of the case left to natural forces.

(*c*) Barrier's method consists in spreading the four fingers around the uterus, pressing the thumb against the fundus, and forcing the neck against the curve of the sacrum as a point of resistance.

(*d*) Courty's method consists in passing the index and middle finger up the rectum, dipping them into the cervical ring, and thus gaining a point of resistance. This may be advantageously combined with Nöggerath's method in suitable cases.

(*e*) Thomas' method consists in abdominal section and dilating the cervical ring with an instrument made like a glove stretcher, and reposition of the inverted uterus by any one of the methods mentioned by the hand in the vagina.

(*f*) Dr. Watt's[12] device for accomplishing dilatation from above without abdominal section consists in carrying the fingers into the hollow of the inverted organ by way of the rectum, and reducing the organ as in the Thomas operation.

(*g*) Tate's (Cincinnati) method consists in introducing the index finger of one hand into the rectum, and that of the other into the bladder, and with both dilating the cervical ring, while the two thumbs in the vagina press the fundus upwards.

(*h*) J. P. White's method of effecting reduction by his well-known repositor is, we believe, sufficiently familiar as to require no detailed description here.

Aveling and Byrne have also invented excellent repositors.

The former of these seems worthy of more than a passing notice. F. Barnes,[13] after describing White's apparatus, refers to Aveling's instrument in the following language:

" Another instrument of the same class, which is even more successful, is the sigmoid repositor of Aveling, the principle of which is to insure that pressure to be always applied in the pelvic axis. The instrument consists of a vulcanite cup, which fits on the inverted fundus, attached to a stem made of soft German silver; the stem is sigmoid in outline, with a moderate curve. The extremity of the stem is in the line of the tip of the coccyx. Pressure is exerted by carrying two bands in front and two behind, to be attached to four elastic rings fixed to an abdominal belt kept in position by means of shoulder braces. * * * Dr. Aveling, in 1886, in a lecture, collected twelve cases treated by different operators with his sigmoid repositor."

Table with names of operators and time for reduction:

Case	1.	Operator,	Dr. Aveling	54½	hrs.
"	2.	"	Dr. Williams	33	"
"	2.	"	Dr. Gervis	51¾	"
"	4.	"	Dr. Aveling	52½	"
"	5.	"	Dr. Rogers	40	"
"	6.	"	Dr. Edis	48	"
"	7.	"	Dr. Bantock	31	"
"	8.	"	Dr. W. Duncan	48	"
"	9.	"	Dr. Galabin	53	"
"	10.	"	Dr. Aveling	9	"
"	11.	"	Dr. Davis	14 (?)	"
"	12.	"	Dr. Fancourt Barnes	8	"

Byrne's instrument is also constructed upon correct mechanical principles, consisting of a cup, which is made shallower and less capacious by the action of a screw at its lower extremity, as the inverted uterus gradually returns to its place.

(*i*) Brown's[14] (Baltimore) method consists in making an incision 1½ inches long in posterior wall of uterus, avoiding tubes and large vessels; introducing Sim's large dilator up into the cervix and dilating this canal thoroughly; the index finger is then passed up to explore for adhesions, which, if present, are ruptured. The incision in uterus is then sewed up with silk worm gut and the organ replaced by taxis through the now patulous cervix.

To complete the list of our resources in dealing with inversion of the uterus, it is incumbent on us to mention amputation. Should it be deemed advisable to resort to this procedure, in spite of its manifold dangers, Dr. West[15] has shown that the method by ligature, followed in two to three days by amputation with knife or cautery, is by far the safest at our command.

To the above-mentioned plans of dealing with the inverted uterus we venture to add our own, which is not one for effecting reduction, but of maintaining the organ in place when once reduced by inserting into its cavity a suitable stem, which is attached to any cup pessary, supported by elastic bands to the patient's belt. It should of course be understood that this method is only suggested for cases of recurring inversion of the uterus.

In discussing the treatment of our case with Dr. J. G. Clark,[16] of the Johns Hopkins Hospital, he suggested the following operation for the purpose of overcoming the relaxed condition of the neck and cervix of the uterus, which permitted the recurrence of the inversion. He proposed opening the abdomen and incising an elliptical piece of tissue from the lower segment of the uterus, on its anterior surface, after first detaching and pushing down the bladder, as in doing a hysterectomy, and sewing up the rent with catgut and silk, thus narrowing the uterine canal as much as seemed necessary to prevent a recurrence of the inversion. This plan appeals to us as much more surgical than the method adopted by us, and would enable us to discard the confessedly dangerous intra-uterine stem. Still our plan is so simple and succeeded so well, in the above described case, that we should probably resort to it again in a similar case.

In conclusion, the interesting and unique features claimed for our case are:

1. Its great rarity; of nearly 1,000 cases of inversion of the uterus found in the literature, not one case of recurrence was discovered. Our case appears, therefore, to be the first one of its kind reported.

2. The obliteration of the cervical ring — the one obstacle

which usually renders the reduction so difficult, the absence of which in our case made it so easy, and which also explains the susceptibility to recurrence.

3. The device for preventing the recurrence, which is, so far as we know, the first application of the principles of the intra-uterine stem in conjunction with the cup pessary in cases of this kind.

1. S. Pozzi. Treat. on Gynæcology, p. 522, vol. I.
2. W. F. Johnson, Ref. Hd. Book Med. Sciences, p. 488.
3 do do do
4. Mundé in Diseases of Women, Thomas & Mundé, p. 451.
5. Columbat, American Ed., p. 186.
6. Quoted from Ranking's Abstract, vol. VII, by G. Hewitt.
7. Courty, Mal de l'Uterus, p. 797.
8. Chas. F. Weiss, Paris, Op. Cit.
9. Gaz. des Hop., 1853.
10. Mal des Femmes, 2 ed., p. 510.
11. Ref. Hd. Book, Med. Sciences, p. 494.
12. N. Y. Med. Rec., Ed. Nov. 24, 1893.
13. Prov. Med. J., Leicester, 1895, XIV., 483-486.
14. N. Y. Med. Jour., Nov., 1883.
15. Thomas & Mundé, Text Book, p. 420.
16. Personal Communication.

FORMALDEHYDE AS A DISINFECTANT.*

By CHARLES E. DAVIS, M. D.,

Instructor in Hygiene in the Albany Medical College.

[Dr. Davis, after mentioning the need of disinfectants due to the crowded condition of our present mode of living, indicated the essential differences between disinfectants and antiseptics, and enumerated in detail the advantages and disadvantages of the different classes of disinfectants — the physiological, the chemical and the thermal.]

The need of a thorough chemical disinfectant is apparent, and in formaldehyde gas the hopes of all sanitarians center. For many reasons it is an ideal disinfectant, on account of its rapid diffusibility, which is much greater than chlorine, and the ease with which it can be used. But the one very important feature it seems to lack is sufficient penetrating power. For general purposes its penetrating power may be said to be sufficient, and for a surface disinfectant its value has been proven beyond doubt.

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* Read before the Albany County Medical Society, November 17, 1897.

Its rapid diffusibility, however, makes necessary the stopping up of all escapes in a room before its use, in order that the contents of the room may be exposed to the action of the gas for a longer or shorter period of time, depending upon the necessity of the case. The fact that it can be employed in any apartment of a house without affecting in the least the wall paper or other belongings adds materially to its value. The following experiment was made by Dr. Balch to test the effectiveness of the machine employed, as well as the gas. Cultures of diphtheria were placed about a room in several places where the germs would most naturally be, and the gas was turned into the room for twenty minutes, about one-half pound of the forty per cent. solution being used. The room was closed for six hours, and at the end of this time the cultures were removed and examined by Dr. Lartigau, and found to be sterile, thus confirming the many experiments of this kind which have been made. At the present time the Health Boards of New York, Boston, Baltimore and Albany have adopted the use of the gas as a disinfectant.

The gas is prepared by subjecting methyl alcohol to complete oxidation. It is introduced into commerce in the form of a forty per cent. water solution, under the names of formol and formaline. The difficulty of using it was largely overcome by the instrument made by the Sanitary Construction Company of New York. Many others are made, but none compare with this machine in simplicity, price and safety. It consists of a copper reservoir having a capacity of about three quarts. From the bottom of this leads a one-fourth-inch copper tube, which two inches lower down forms a coil. The lower end of the coil is continuous with a brass tube of the same diameter, which ends about four inches above the reservoir in a rubber tube having a nozzle sufficiently small to be passed through a keyhole or any other small opening. Underneath the coil is placed a Swedish lamp, which furnishes the necessary heat. The Formaldehyde solution which is placed in the reservoir is allowed to enter the coil slowly by means of a valve. At this point it is acted upon by the flame of the lamp underneath, and as a result the gas contained is discharged through the small tube into the apartment to be disinfected. The advantages claimed for this instrument are as follows: That the Formaldehyde solution can be used alone without the addition of a neutral salt, thereby dispensing with the pressure which is required when this mixture is used in an autoclave. As there is no need of the employment of pressure in releasing the gas, the instrument can be made of light material and comparatively cheaply. This apparatus will be favorably considered, inasmuch as the autoclave devised by Trillat, and also the method of combining chloride of calcium with the Formaldehyde solution for use under pressure in an autoclave has been patented by a French company with which Trillat is said to be connected. Experiments made with this apparatus would thus far show that the results are practically the same as those derived from the autoclave; it also has the advantage possessed by the Trillat apparatus of rapidly releasing from outside the Formaldehyde into the apartment to be disinfected.

Notwithstanding the great progress of the last few years, the methods of disinfection are still far from being perfect, and the main dependence is in prophylactic measures. Bacteriological researches have demonstrated that disinfection is not identical with the simple use of a so-called " antiseptic " agent, but that it requires a thorough knowledge of an entire series of fixed principles. The mastering of disinfection does not simply mean knowing the strength of an antiseptic fluid, but consists in knowing also the condition of the object to be disinfected and the vitality of the microbes established in this object. There must be considered all the difficulties of disinfection resulting from dirty, oily or fatty substances surrounding the object to be disinfected. It is not necessary to discuss the use of steam and hot water for purposes of disinfection, but sufficient to say that next to burning by fire, sterilization by boiling is the most effective means for the destruction of germs.

91½ HUDSON AVENUE

Clinical and Pathological Notes.

Syphilitic Irido-Choroiditis.

REPORTED TO THE SENECA COUNTY MEDICAL ASSOCIATION, NOVEMBER 8, 1897.

About two years ago a gentleman, 36 years of age, holding a position of some responsibility in one of the pump works of the village, went into the machine shop, took up a hammer, and struck a piece of iron a sharp blow. As a very natural consequence, a small portion was broken off, which, rebounding with great force, struck his left eyeball on the outer side, near the corneo-sclerotic junction. For two days he managed to attend to his duties without great discomfort, but on the third day he presented himself at my office for treatment. He had at that time brow pain, dread of light, lachrymation and blurred vision. The eyelid was somewhat swollen and red. There were a finely injected area around cornea, no increase in tension, but the pupillary orifice was small and irregular, with iris velvety and discolored — in short, a good clinical picture of acute iritis. The cause was assumed to be the blow received, and no further thought was given to it. The case was treated then by atropia sulphate drops (four grains to the ounce), hot brow applications, rest and darkness, until three days later, when alarming symptoms presented themselves — hypopyon and almost total blindness in the eye, on account of a white mass which had appeared behind the lens. Things thus seeming to grow worse instead of better, an effort was made to find out more about the history of the man, with the result that a confession was made of his having had a mild attack of syphilis five years before, which had been treated about two months. Here, then, was the solution of the case. The blow had only been an exciting cause. The syphilis was the underlying and real cause. The eye was now in a critical state — iritis with hypopyon, choroiditis with blindness, due to the exudate into the vitreous, which was visible to the naked eye in the pupil behind the lens, colored a silvery white. When the head was turned to one side a wave of oscillation was sent over the eye, and the pus in the anterior chamber would turn to a corresponding degree. Exudative inflammation of a tissue means a series of circulatory phenomena, which comprise engorgement and slowing of the blood current in the capillary vessels, with emigration of white blood cells and diapedesis of red cells, and plasma through the capillary wall, which together make the fibrin. In the eye the inflammatory changes are in no wise different from those observed elsewhere in the body, but in this case there is a difference in that it is a syphilitic exudative inflammation, not a simple one, with which we have to deal, and as such it exhibits the well-known tendency to continue, which is characteristic of the inflammations, exudative or productive, which are caused by the syphilitic microbe. The exudate then consisting of fibrin, white and red blood cells, was in the vitreous, produced by inflammation of the vascular choroid coat of the eye. The hypopyon in the anterior chamber was of the same nature, and came from the inflammation of the iris. Very active anti-syphilitic treatment was now begun. A blister was applied to the temple. One-tenth grain of calomel was given every hour, with mercurial inunctions of blue ointment to the point of salivation. Iodide of potassium was used internally, in doses of 45-60 grains a day. The eye was kept bandaged and atropine drops used vigorously. Often a drop of a four per cent. solution was instilled every half-hour, in order to secure good dilatation of the pupil and to prevent adhesions. Improvement took place immediately, but a cure was not effected so rapidly as expected; but in the course of three months the hypopyon, which had come and gone persistently, finally disappeared, and vision increased gradually. The cloud in the vitreous was little by little absorbed away, and at present the eye is to all appearances and visual tests as good as ever. With care a few floating particles can be seen in the vitreous with the ophthalmoscope. The case teaches that in iritis one should inquire early for syphilitic history; it also demonstrates how greatly eye lesions of syphilis are amenable to active treatment.

F. W. LESTER, M. D.

SENECA FALLS, N. Y.

Editorials.

The New Albany Hospital.

The project to build a modern hospital for Albany, inaugurated by the governors and medical and surgical staff during the past year, has been pushed ahead with all the speed consistent with caution. Three-fourths of the necessary two hundred thousand dollars have been raised by private subscription, and in the last six months the best thought and study have been given to the plans for construction. It has been decided to erect a pavilion hospital. The general plan consists of a series of two-story pavilions connected by corridors with a central administration building. Four pavilions, extending north at right angles with the corridor, provide for one hundred free and eighty-five private patients. From the rear of the corridor extend the service building, the nurses' house and the building for the amphitheater and operating rooms. The site provided by the city is upon the rising ground adjoining the Dudley Observatory, near the Bender Hygienic Laboratory. Recognized principles have been most carefully observed in the plans, and at the close of the year the new institution will be well advanced toward completion.

In the February ANNALS it is proposed to publish a full description of the new hospital, and to present a bird's eye view and a series of floor plans. In the meanwhile the success which has attended the governors and staff it is hoped may be augmented by the renewed co-operation of all friends of this time-honored institution.

Alumni Contributions.

The ANNALS has been fortunate in securing for the current year a series of papers by alumni of the college not residing in Albany, and not actively connected with the work of the college. A feature of the year will be this series of alumni papers. The list of contributors who have consented to assist the ANNALS in this way includes Drs. James P. Kimball, U. S. A. ('64); Theobald Smith, Bussey Institute ('83); E. V. Stoddard, Rochester, N. Y. ('63); Henry Laning, Osaka, Japan ('64); Horace T. Hanks, New York ('61), and J. V. R. Hoff, U. S. A. ('71). Other names will be added to this list as the year progresses, and the ANNALS congratulates itself and its readers on the character of its contents, as assured by this list of contributors.

Reports of Medical Legislation.

It will be the endeavor of the ANNALS, during the coming session of the Legislature, to report each month, as fully as possible, the titles of the bills introduced pertaining to medical legislation, with their authors, the date of introduction, the committee to which they are referred, the dates of any hearings thereon, their positions on the calendar, dates of passage or defeat, or signature of the governor.

The scattering of these bills among several committees, the absence of a weekly or monthly record of the legislative work, and the failure of the press to report with any degree of accuracy the bills presented, will complicate the work. However, if the

ANNALS is successful, it will be the only medical journal in the State which publishes such a list.

This work will be wholly extraneous and additional to the monthly comments on State and National medical matters.

Scientific Review.

Some Factors in the Etiology of Hepatic Cirrhosis.—The etiology of cirrhosis of the liver is still in a condition of sufficient uncertainty to render an occasional review of the literature of this subject worth while. It is the object of the present review to note the trend of thought in the available literature bearing on (1) the relation of alcohol to cirrhosis, and (2) the relation of infections to cirrhosis.

The Relation of Alcohol to Cirrhosis —In his thesis of 1897, Saingery, writing on the etiology of alcoholic cirrhosis, recognizes three kinds of alcoholic beverages which may be related to the disease. These are wine, alcoholic liquors (whiskey, gin, etc.), and essential liquors, as cordials, liqueurs and the like. He attempts in his work to settle the question as to whether all three forms are capable of producing cirrhotic changes, and produces the following figures to form a basis for his conclusions. Clinical observations give the following facts: In three hundred and tweny-eight individuals using only alcoholic and essential liquors to excess, without the least excess of wine, there was no cirrhosis. In sixty-eight individuals who abused wine, but not other forms of drink, cirrhosis was always present in some degree. An inquiry into the history of one hundred and forty-four cirrhotic drinkers elicited the fact that all had abused wine, and sixty-eight of them nothing but wine. From this the author concludes that the drinkers of alcoholic and essential liquors do not become cirrhotic, and that therefore the cirrhosis of wine drinkers is not due to the alcohol *per se*. Pathological observations showed that in thirty-nine autopsies on individuals who had used alcoholic or essential liquors to excess, fatty liver was present. Those individuals who showed both cirrhosis and fatty liver at autopsy were all wine drinkers, but besides drank alcohol and essential liquors. The author concludes that wine produces cirrhosis and alcohol steatosis. The minimum dosage said to be necessary to produce cirrhosis from wine was from two to three litres daily, over a period of from eight to ten years. This much is necessary, but does not always produce cirrhosis. The author states that some brands of wine are more apt to produce cirrhosis than others, and asks as a final question what substance it is in the wine that causes the cirrhotic changes.

The discussion before the French Academy of Medicine, in which Dr. Lancereaux is taking a prominent part, practically takes up the subject where Saingery leaves it. Lancereaux goes over the same ground as Saingery, and comes to the same conclusions, but goes a step further, and states that the cirrhosis of wine drinkers is dependent on the process of plastering, by which certain chemical agents of a noxious character are added to the beverage. He claims that it is the salts of potash contained in this plastered wine which cause the cirrhotic changes, and further claims that he was able to artificially produce cirrhosis in animals by causing them to eat food mixed with these salts. In from six to eighteen months all of the animals so treated showed more or less cirrhosis of the liver. In the discussions following Lancereaux's papers he was strongly opposed by many of his colleagues. Various objections were brought against his contention, the main ones being the fact that cirrhosis occurred in non-wine-drinking countries, and the fact that it was very difficult in wine-drinking countries to find individuals who confined their attentions to wine. The question raised by Saingery and Lancereaux would seem to be still *sub judice,* but is certainly worth looking into carefully.

In connection with the relation of alcohol to cirrhosis, it may be added that from an experimental standpoint the production of cirrhosis by the administration of pure alcohol has been singularly unsuccessful. Lafitte, Strassman and Affanassief were all unable after months of experimentation to produce cirrhotic changes. Von Kahlden found only parenchymatous changes, and those mostly in the form of fatty degeneration. Straus and Blocq claim to have been able in some instances to produce the lesion.

The Relation of Infectious Diseases to Cirrhosis. — The evidence in favor of an infectious cirrhosis is both of a clinical and experimental nature. Cirrhosis of this character can perhaps be best observed in children, providing that hereditary syphilis can be excluded, as in children the alcoholic factor can usually be definitely excluded.

The peculiar form of cirrhosis occurring in the Brahmin caste in the East Indies would seem to be a good example of infectious cirrhosis, according to the description of Gibbons, Chose and Mackenzie. This form is always associated with gastro-intestinal disturbances; it occurs in children usually under one year of age, and seldom after three years, in whom syphilis can be excluded. According to most of its observers, it is due to the gastro-intestinal disturbances, and presumably associated with the absorption of toxic substances from the gastro-intestinal tract. It usually occurs among the children of the rich, who are fed at this time of life mostly on vegetables and sweets. Gibbons has seen fourteen children in one family die of the disease in succession.

In connection with this class of cases the experiments of Krawkow are of great interest and importance. This author, by introducing into the alimentary canal of fowls different micro-organisms, was able in some instances to produce marked cirrhotic changes in the liver. The bacteria which seemed most frequently to produce these changes were the bacillus pyocyaneus and the staphylococcus pyogenes aureus. Other authors have succeeded in producing an experimental cirrhosis by infecting the organism in general, or else the portal system or the biliary passages, either with bacteria or with their toxines. Scagliosi produced cirrhosis in fowls by injecting cultures of anthrax, prodigiosus and subtilis into the blood, and concludes from his observations that infection played a much more important role than alcohol in the production of the disease. Roger obtained thromboses, hyaline degeneration and cirrhosis in the liver by infecting animals with his bacillus septicus putridus. Flexner observed cirrhosis in some instances after the continued injection of the blood serum of one animal into another. Gilbert and Dominici were able to produce cirrhotic lesions by an experimental infection of the biliary passages with various micro-organisms. Charrin was able to produce a cirrhotic process in the rabbit by injecting the toxines of bacillus pyocyaneus into the portal vein.

In all these cases changes in the cells were noted, as well as in the interstitial tissue, and most of the authors were inclined to believe that the cellular changes were the primary ones. In human pathology, within the last few years, there have been numerous cases reported in which changes in the liver cells similar to those experimentally produced have been noticed, and presumably such changes can be followed by cirrhotic processes. Thus Reed in typhoid fever found areas of necrosis throughout the liver substance, and in one case, where the individual had had the disease some years previously, was able to demonstrate new connective tissue formation. Le Count and others have seen similar changes in the liver in tuberculosis; Flexner has observed them in various septicæmias, and Barker has recorded a case of malaria in which they were present.

The supposition that cases of cirrhosis may result from such lesions, while resting in some instances on good grounds, requires further study both clinically and pathologically, and a closer attention to the relation of cirrhosis to infectious processes in general will doubtless render the etiology much clearer.

GEORGE BLUMER.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D

American Public Health Association. — This association held its twenty-fifth annual meeting in Philadelphia, October 26th, 27th, 28th and 29th, 1897.

In matters pertaining to public health we are in the transition period between inactivity and ignorance and the other extremes, knowledge and power, and we are certainly much nearer the top of the ladder than the bottom. For this reason the discussions and recommendations of our National Public Health Society just at this time are of keen interest and importance.

Of late years it has been quite evident that the advances of our health authorities in knowledge have greatly exceeded their advances in power. Wise and discriminating legislation would bring our public health system close to a point of perfection, but on the contrary, its hardest blows have been received by the workings of the different branches of the government.

During the session the principle committee reports were as follows:

"On Steamship and Steamboat Sanitation."

"On Car Sanitation."

"On Pollution of Water Supplies."

"On Health Legislation."

"On Disposal of Garbage and Refuse."

While the discussions of these committees were important in every detail, and their recommendations abreast with the advances of the year, the committee whose report is of the sharpest import, and whose findings bear upon a subject of universal interest at the present time, is that on "Public Health Legislation." The report is a final one after years of work, and recommends in strong terms the establishment of a "Public Health Board." It seems that the committee met with obstructions in formulating the report in the way of objections to some of the details of the bill commended to create such a board, and judging from the nature of one objection, which was made by Dr. A. L. Gihon, U. S. A., it may be possible that this same objection will have to be met when the bill is presented to Congress. To use Dr. Gihon's expression: "I am one of those who believe that the Marine Hospital Service should not be enlarged so as to become a National Health Board." This is substantially what the bill will do, and will be an impediment to its passage.

The individual papers were of a high standard of excellence. Dr. Eduardo Liceaga, president of the Supreme Board of Health of Mexico, and Dr. Jose Ramirex, of the same board, presented "A Contribution to the Study of Yellow Fever from a Medico-Geographic Point of View," in which the difficulty of diagnosis between yellow fever and certain forms of paludic infections was dwelt upon, and showed the extreme vigilance of the quarantine stations of Mexico against foreign infection.

The chief point of President Horlbeck's address was the recommendation of a government commission on yellow fever, and suggested that a committee from the association be appointed to wait upon the President of the United States, with a view to solve the problems of yellow fever.

Another paper of importance, and one which brings us near home, was read by Dr. S. A. Knoff, of New York City, on the

"Urgent Need of Sanatoria for the Consumptive Poor of Large Cities." According to the writer and several well-known sanatarians who were quoted, the only way to check the rapid increase of tuberculosis in large cities was the erection of special sanatoria under municipal control. In many of the New York hospitals patients in all stages of pulmonary tuberculosis are placed in wards with patients suffering from typhoid, pneumonia, la grippe, etc., and time and again I have seen pulmonary tuberculosis develop in convalescents in some of these wards. This condition of affairs, coupled with the statement of Dr. Biggs, that tuberculosis was the cause of one-seventh of all deaths in New York City, makes the paper opportune.

Papers on the "Pollution of Water Supplies," "Fumigation with Formaldehyde Gas," "Diagnosis of Small-pox," and "The Barber Shop as a Menace to Public Health," were among others read before the association.

The next meeting is to be held in Ottawa, Canada, in 1898.

The Recent Yellow Fever Epidemic. — For the past four months the medical and lay press have constantly printed reports from the Gulf coast, the region of a yellow fever epidemic of no small proportions. The public press was not actuated in its reports and discussions by the fear of a spread of the disease to the Northern States, but by the general interest that an epidemic of so virulent a type in any part of the world would create, and by its effect upon the business interests of the country. The fear of spread did not exist for an instant, for the reason that by diligent work the disease was confined to the southern coast until the period of frosts in the north; then the danger ceased, because it is generally known that yellow fever and frost cannot exist in the same place at the same time. And here it would not be out of place to say that the lay press has not paid a very high tribute to the quarantine and sanitary authorities in charge by printing from time to time the statement that "nothing but a frost could control or stamp out the epidemic." It seems but just that the terrific and unsurmountable handicap which the physicians met in the failure of police power alone, without the consideration of many others, would justify the qualification of such a statement.

The medical press was broader minded in its observations, knowing the technical difficulties which existed, and which could not be overcome; though therein have appeared some strong criticisms of the conditions in and about Ship Island Quarantine Station, and through which it is pretty conclusively settled that yellow fever first entered the southern country. It must be noted, however, that these criticisms appeared first in the form of letters to the daily press.

It can be said to the credit of the medical journals that they did not hold up the finger of shame and rebuke in their discussions, but endeavored to point out the weak points of the defense, and to reason out remedies.

The principle difficulties which the health authorities met in this epidemic were:

I. The difficulty of diagnosis between yellow fever and the paludal or marsh fevers, as dengue, intermittent and remittent. The suspicious cases were quarantined for the protection of the community until a diagnosis could be made; then came difficulty number

II. A panic ensued; sick and well alike scampered from the town in all directions; the surrounding towns instituted a "shotgun quarantine;" business was paralyzed, and the disease spread in every direction.

III. Some sick, and any who remained and fell sick later, were quietly hidden by their friends; if found it required violence to get at them. The small epidemic soon developed into a dread scourge despite the efforts of the health officials.

IV. Some of the dead of yellow fever were taken from the health officers by force and buried by their friends.

What can be done in the face of such an entanglement? It may be true that the Marine Hospital Service erred in establishing a quarantine station on Ship Island, in close proximity with the mainland, and where sailors from infected vessels could easily escape to their families and friends. Granting this to be an error, the greatest source of culpability is in the people themselves — their ignorance and obstinacy are the chief causes of their undoing.

The discussion of the situation has been replete with suggestions and plans for preventing the recurrance of the scourge, with its attending incalculable damage. A curative, not an immunizing serum, is reported to have been discovered by Sanarelli. We hope it may be true, but even so, it would be but one weapon to fight with, whereas many are necessary.

In closing we venture our uppermost thought — it seems to us that the time is ripe for the work of a Yellow Fever Commission, the appointment of which has been suggested by the president of the Public Health Association. A thorough investigation and impartial report by such a commission is the only thing which will effectually point out the present and past weaknesses, and, most important of all, the proper line of future work.

Obituary.

JOHN JONES, M. D.

Dr. John Jones died at Middle Granville, November 20, 1897. Dr. Jones was born in the town of Marcy, December 27, 1863, and was the son of John and Margaret Jones, who have been dead some years. He received his early education in the public schools of his town and at the Holland Patent Academy. For a number of years he taught schools in the town of Marshall. and proved himself an energetic and capable instructor. In 1890 he began the study of medicine with Dr. M. W. Hunt, of Holland Patent, and graduated from the Albany Medical College in the class of '93. Shortly after graduation he began the active practice of his profession at Middle Granville, where he had built up for himself a large and lucrative practice.

JAMES F. MURRAY, M. D.

Dr. James F. Murray died at Gloversville, N. Y., December 5, 1897, aged 52 years, from abscess of the liver. Dr. Murray graduated from the Albany Medical College in 1866, and had been successful in practice.

WILLIAM J. KERNAN, M. D.

After an illness of three weeks, Dr. William J. Kernan died on the morning of November 24, 1897. The cause of death was peritonitis. Dr. Kernan was born December 22d, 1864. He attended a public school and the Christian Brothers' Academy of Albany, and at the age of 13 entered the service of the State department of public instruction as messenger. He was appointed stenographer in the insurance department, leaving that office to take a three years' course in the Albany Medical College. He also studied with Dr. S. B. Ward, and before graduation served for some time in the Willard State Hospital.

JOSEPH LEWI, M. D.

Dr. Lewi died at his residence in Albany, Sunday, December 19, 1897. An appropriate biographical sketch will be published in a later issue of the ANNALS.

Medical News.

ALBANY MEDICAL COLLEGE ALUMNI ASSOCIATION OF GREATER NEW YORK. — The third annual meeting of this flourishing association was held December 3, 1897, at the residence of Prof. Wm. H. Thomson, M. D., No. 7 West Fifty-sixth street. Preparations were made for the third annual banquet to be held January 20th, 1898, and the following officers were elected: President, Horace Tracy Hanks, M. D., class of '61; Vice-President, John J. Van Rensselaer, M. D., class of '59; Secretary, Warren C. Spalding, M. D., class of '81; Assistant Secretary, Edward F. Quinlan, M. D., class of '68; Treasurer, Henry F. C. Müller, M. D., class of '87. Governors — Dr. William Stevens, class of '75; Dr. Frederic Loughran, class of '90; Dr. S. E. Armstrong, class of '85; Dr. Howard J. Wood, class of '85; Dr. H. B. Maben, class of '57, President of the Albany Medical College Alumni Association, *ex-officio.*

The dinner is to be given at the Hotel Savoy. Many guests are expected to be present, and a fine programme of speeches, music, etc., is being prepared.

MEDICAL SOCIETY OF THE STATE OF NEW YORK. — The preliminary programme for the coming meeting of the New York State Medical Society will be ready for distribution on the first of January. An effort has been made by the Business Committee to curtail somewhat the programme, in order that some of the embarrassments of previous years might be avoided, that more opportunity can be given writers to present their papers and the society for the discussion of them.

As has been the custom in previous years, the Tuesday evening session will be given over to a stereopticon and X-ray exhibition, in which a number of gentlemen have consented to participate. Doubtless all the advancement made in the X-ray as a diagnostic measure, not only surgical but medical, will be presented.

Only two set discussions have been arranged — one on prostatic hypertrophy, in the charge of Dr. L. Bolton Bangs, of New York. Dr. Bangs has been especially fortunate in securing writers of exceptional experience to participate in this discussion, and very much that is of interest and assistance to the general practitioner will doubtless be presented.

A second discussion, on the milk supply of cities and villages, is under the charge of Dr. E. F. Brush, of Mt. Vernon, N. Y. There is scarcely any question relating to the public health which has recently excited so much attetnion as has this one. The hygienic condition of dairies, the relation of tuberculosis in cattle, the transportation, sterilization and diseases which can be traced to milk supply, together with the police regulations in relation to milk supply will be presented by competent writers, whose names for the present cannot be given, with the titles of their papers, for the reason that some minor details are not fully arranged.

Dr. P. M. Wise, president of the State Commission in Lunacy, and Dr. C. G. Wagner, superintendent of the Binghamton State Hospital, have already consented to present papers on the care of the insane and its relations to the general practitioner.

Dr. William Warren Potter, of Buffalo, will present a paper on the laws relating to the practice of medicine and the regulations thereof, supplementary to the report of the examining board representing this society.

Papers on internal medicine have been promised by a number of gentlemen from different parts of the State, which promise to be of considerable interest.

Diphtheria and its treatment by antitoxin, as well as the proper methods of house disinfection following diphtheria and allied diseases, will be presented.

A number of papers in obstetrics, gynæcology and surgery have already been offered, affording abundant material for discussion. Already a sufficient number of papers have been offered by representative men throughout the State to complete the programme.

For reasons already stated, writers from without the State and gentlemen not directly affiliated with the society have not been invited to present papers at this meeting. This is a somewhat radical departure from older customs, but owing to the little time at the disposal of the Business Committee, it seemed best to them to confine the scientific work of the society to its members, or at least to members of societies in direct affiliation with the Medical Society of the State of New York.

The committee feels that they are in a position to say that the programme will not be less instructive and that the hurry of previous years will be avoided.

ALBANY COUNTY MEDICAL SOCIETY. — A regular meeting was held Wednesday evening, November 17, 1897, the president, Dr. J. V. Hennessy, in the chair. A paper was read by Dr. C. E. Davis upon "Disinfectants and Disinfection, with Reference to the Use of Formaldehyde Gas, with Exhibition of Machine for Generating Same." The paper was discussed by Drs. Vander Veer, Blumer and Macdonald. A paper was read by Dr. W. O. Stillman upon "The Uric Acid Diathesis in Some of Its Manifestations." Dr. Stillman's paper was discussed by Drs. Neuman, Hun and Blumer. Dr. George Blumer exhibited pathological specimens of an hour-glass contraction of the bladder, aneurism of ascending portion of the arch of the aorta, and a large cystic kidney from blocking of the lower end of the ureter.

A regular meeting was held Wednesday evening, December 15, 1897, the president, Dr. J. V. Hennessy, in the chair. A paper was read by Dr. C. F. Theisen upon "Nasal Tuberculosis, with Report of a Case of Primary Tuberculosis." Dr. Theisen's paper was discussed by Dr. Ward. Dr. Wm. Hailes exhibited surgical cases, and demonstrated, in the living subject, the efficiency of the X-ray apparatus recently purchased by the faculty of the Albany Medical College.

A special meeting to take action on the death of Dr. Joseph Lewi was held December 21st, 1897, the president, Dr. J. V. Hennessy, in the chair. Dr. F. C. Curtis moved that a committee be appointed to prepare suitable resolutions. The president appointed as such committee Drs. Curtis, Vander Veer, O'Leary, Freeman and Porter. Dr. Curtis presented the resolutions of the committee, which were adopted, ordered to be incorporated in the minutes of the society and a copy transmitted to the family of the deceased. Memorial remarks were made by Drs. Curtis, Bigelow, O'Leary and Freeman. On motion of Dr. O'Leary, seconded by Dr. Tucker, the society resolved to attend the funeral in a body.

X-RAY APPARATUS. — The College is to be congratulated on the possession of the X-ray plant lately purchased from the General Electric Company of Schenectady. Improvements are constantly being made in the apparatus for the generation of the rays, and the machine in question probably is as nearly perfect as a machine can be. The coil which generates the secondary current can give a spark of twelve inches, representing a voltage of 150,000. The advantage of this voltage is that it gives great penetrating power to the rays which are developed from it. This is especially important when it is necessary to traverse large masses of tissue, as in the case of the trunk or the thigh. In order to make use of the street current in operating this apparatus, a clever little device called the motor-generator is used. This is a combination of motor and dynamo all in one. The motor part receives the powerful street current, and by its revolution drives the dynamo, which, in its turn, gives off just the current which the coil requires. If in any way the street current should be greatly increased, as, for example, by the accidental crossing with another wire, the motor-generator might be burned out. An absolute bar to the current would be formed, however, and the delicate and expensive apparatus beyond would be safe from injury. The Crooke's tubes which accompany the machine are very fine instruments, and give off an abundance of the rays. There is a very clever little device for regulating the vacuum in the tubes, which operates as follows: When the vacuum becomes too high in a tube, a shunt circuit is immediately formed, which passes through a little receptacle at one end filled with a potash salt. This liberates a certain amount of watery vapor, which renders the main cavity of the tube pervious to the current, which immediately resumes its proper course.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR has announced the following plan for extension of its work: The following schedule of prices is arranged as a general guide to the physicians summoning the nurses. The guild reserves the right to arrange the rates with the families receiving the care of the nurses. The guild will care for patients among people of moderate incomes at the following rates:

One nurse for necessary care of patient night and morning, not to exceed two hours, $1.00 per day.

A nurse to prepare patient for minor operations and assist at same, $2.00 and upward, according to time.

A nurse to remain with patient all night, from $1.00 to $2.00.

A nurse for maternity cases, to be present at time of delivery, with necessary care of patient and child, not to exceed two hours daily, one week $5.00. Any care thereafter at same rate.

Baths, massage, surgical dressings, douches, catheterizations, etc., as ordered by physician or surgeon in charge, time not to exceed one hour, from 50 cents to $1.00.

The Guild employs only graduates of training schools of the first rank; the object being to send the best professional skill into the homes of the patients. Post-cards for the use of physicians calling upon the Guild for either charity cases or those able to pay the foregoing rates, may be obtained by application to the President of the Guild.

MRS. W. W. BYINGTON, *No. 1017 Madison Avenue.*

TROY HOSPITAL TRAINING SCHOOL FOR NURSES. — The following lecture course for the current term has been announced:

Dr. J. B. Harvie: Surgical Technique, Wounds, Inflammation, Anæsthesia, Gynæcology. Oct. 28, Nov. 2, Jan. 6, 11, March 22, 24, May 3.

Dr. C. B. Herrick: Surgical and Regional Anatomy. Sept. 30, Oct. 5, Dec. 9, 14, Feb. 17, 22, April 19.

Dr. C. H. Burbeck: Physiology. Oct. 7, 12, Dec. 16, 21, Feb. 24, March 1, April 21.

Dr. Z. Rousseau: Pregnancy. The Puerperal State and Its Management. Nov. 18, 23, Jan. 27, Feb. 1, April 12, 14, May 12.

Dr. D. W. Houston: The General Management of Surgical Cases. Oct. 21, 26, Dec. 30, Jan. 4, March 10, 15, April 28.

Dr. Wm. Finder: Hygiene. Bacteriology. Management of Contagious and Infectious Diseases. Oct. 14, 19, Dec. 23, 28, March 3, 8, April 26.

Dr. M. Keenan: Symptomatology. Observation of Patients with Special Reference to Pulse, Respiration and Temperature. Nov. 4, 9, Jan. 13, 18, March 29, 31, May 5.

Dr. O. Mallett: Food and Dietetics. Care of Infants and Children. Infant Feeding in Health and Disease. Nov. 11, 16, Jan. 20, 25, April 5, 7, May 10.

Drs. C. S. Merrill and C. H. Moore: Special Nursing in Diseases of the Eye and Ear. May 24, 31.

Dr. B. S. Booth: Diseases of Throat and Nose. May 26, June 2.

Dr. T. G. Dickson: The Preparation and Use of Antiseptics. Medicines and Their Administration. Principles of Bandaging. Nov. 25, 30, Feb. 3, 8, May 17.

Dr. M. D. Dickinson: First Aid to the Injured. Dec. 2, 7, Feb. 10, 15, May 19.

Dr. W. P. Mason: Poisons and Antidotes. Water. May 24, 26, 31.

Dr. D. D. Donovan: Characters of Urine, with various tests for albumen, sugar, bile, etc. Weekly demonstrations.

Sister Gabriella: Nurses' Duties to the Patient and Physician.

Sister Martha: Instruction in the Preparation of Dressings, Antiseptic Solutions, etc.

Diet kitchen under supervision of the Sisters.

Duration of Term — Sept. 30, 1897, to June 2, 1898.

Examinations — June 1st to 14th, 1898.

Graduation Exercises — June 15th, 1898.

THE NEWBURGH BAY MEDICAL SOCIETY, of Newburgh, was incorporated November 18, 1897. The directors are: Drs. John D. Brownell, of Walden; S. D. Harrison, of Cornwall; A. V. Jova, John Deyo, J. T. Howell, A. E. Adams and W. J. Carr, Newburgh.

A NEW MEDICAL JOURNAL. — In January, 1898, the Philadelphia Medical Publishing Company, incorporated under the laws of Pennsylvania, will begin the publication of a weekly medical journal, to be called *The Philadelphia Medical Journal.* The management of the company is entrusted to a board of trustees, in which are representatives of leading medical schools. The editorial management has been entrusted to Dr. George M. Gould, whose high reputation as a medical editor guarantees a vigorous, high-toned and interesting publication.

THE LARYNGOSCOPE. — Beginning with the January, 1898, issue, Messrs. John Wright & Co., of Bristol, England, will publish a foreign edition of this valuable periodical.

— W. W. MacGregor, M. D. (A. M. C., 1873), has been appointed superintendent of the Southwestern Insane Asylum, at San Antonio, Texas.

— Drs. Erving Holley and A. Parker Muir (A. M. C., 1896) have been appointed junior assistant physicians in the Manhattan State Hospital, New York City.

MARRIED: APPLEBEE–BABCOCK. — At Albany, N. Y., on Wednesday, November 24, 1897, Dr. Ira Applebee (A. M. C., 1897) and Miss Ida M. Babcock. Dr. and Mrs. Applebee will live at No. 57 Eagle street, Albany.

Book Reviews.

About Children. Six Lectures given to the Nurses in the Training School of the Cleveland General Hospital in February, 1896. By SAMUEL W. KELLEY, M. D., Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons (Med. Dept. Ohio Wesleyan Univ.); Pediatrist to the Cleveland General Hospital; Consulting Physician to the Cleveland City Hospital; President, 1896 and 1897, Ohio State Pediatric Society; Editor *Cleveland Medical Gazette.* 180 pages. Price, in buckram, postpaid, $1.25 net. Cleveland: The Medical Gazette Publishing Company, 1897.

This small work makes no claim to being a complete treatise upon the subject of pediatrics, but consists of practical talks to nurses upon the care and management of children. It contains much which is extremely valuable for nurses and parents, and many suggestions which would be useful to medical students and physicians. It does not give prescriptions or specific directions for medical treatment, but urges the close observation of symptoms and the appreciation of their significance.

These lectures consider the physiology of growth, the various deformities, diseases and injuries common to childhood, the general management of sick children, the great care to be used in the administration of opium and stimulants, the methods of bathing and the application of different local remedies, and conclude with the subject of artificial feeding.

Lectures on the Malarial Fevers. By WILLIAM SYDNEY THAYER, M. D., Associate Professor of Clinical Medicine in the Johns Hopkins University. 326 pages. D. Appleton & Co., New York, 1897.

The scope of this pre-eminently scientific little book is limited, as its title indicates, to the malarial fevers. It is divided into nine lectures, in which the author devotes himself to the discussion of both the clinical and pathological problems involved in this malady.

The importance of malaria in the medicine of the greater part of the world, and the extremely imperfect conception of it by many medical men, certainly justify the author's assertion that " the term malaria has come to be applied in so loose a manner to so great a variety of different pathological conditions that it has been difficult for many physicians to realize that malarial fever is, in fact, a disease as sharply defined and as easily recognizable as pneumonia, pulmonary tuberculosis or diphtheria."

In the first lecture the early history of the development of our knowledge concerning the pathological agent in the production of these fevers is lucidly traced, and the work of Laveran, Marchiafava, Celli and Golgi is carefully reviewed, while the later observations in this country by Osler, Sternberg and Dock also receive due recognition and discussion. The following lecture is devoted to the description of the various methods practiced in the examination of the blood; furthermore, in this and the third lecture a most careful and minute description of the hæmocytozoa of malaria is given, and the various phases in the cycle of its life history are described with much clearness and detail. The three next lectures concern themselves exclusively with the clinical evolution and aspects of the disease in its various manifestations. In the discussion of the anatomical changes occurring in the acute and chronic infections, Dr. Thayer has availed himself of the results of the most recent pathological researches made by Laveran, Councilman and Abbott, Bignami, Barker, and others. The greater part of the seventh lecture is, however, taken almost directly from the comprehensive publications of Bignami. In the eighth lecture we have an admirable exposition of our knowledge of the general pathology of the main symptoms of malarial fever, and of the various infections with multiple groups of parasites, as well as a critical review of the theories of defense, with more particular reference to the vital phenomenon of phagocytosis in spontaneous recovery.

The existence of phagocytosis in malaria first demonstrated by Metschnikoff and Golgi receives acceptance by the author, but the role of the phagocytes as actual combatants against infection is considered by him more in the light of a secondary process than as a phenomenon of primary importance. This is practically the acceptance of the views sustained by Golgi and his pupils. The distinctly cyclical course so often pursued by the fevers, as well as the analogy with other acute infections, leads the writer to the assumption that the more important role in spontaneous cure is played by some parasiticidal substance or substances circulating in the blood serum.

The book concludes with an admirable lecture upon diagnosis, prognosis, treatment and prophylaxis. The most favorable time recommended for the administration of the quinine is just previous to a paroxysm, or during its occurrence. This recommendation is in no manner empirical, for it is based on the observations of Laveran and Mannaberg, who experimentally demonstrated that quinine acts with the greatest efficacy upon the parasite at the time when it is free in the blood as a segmenting body, or a young spore just before entering the red corpuscle. The part devoted to the prophylaxis is short, but suggestive, and agrees essentially with Guttman's views.

Three excellent colored plates are appended, showing the various forms of the organisms in their various phases of development.

This book, it may safely be said, is the most scientific exposition and presentation in the English language of our recent knowledge concerning the malarial parasite, as well as of the latest clinical studies and pathological anatomy. Its high degree of excellency, the profound knowledge of the author upon these subjects, as well as his reputation, recommend this book to all who wish to familiarize themselves with the malarial fevers and its literature. AUGUST JEROME LARTIGAU.

Current Medical Literature.

Dipththeritic Conjunctivitis. — By Myles Standish, M. D., Boston *(Trans. Am. Oph. Soc., 1897).* The article commences with reference to the author's formerly published recommendation of a bacteriological diagnosis in cases of diphtheritic conjunctivitis. Many cases of this disease do not follow the classical, clinical picture that has been supposed to represent it, and, consequently, many more destructive processes are diphtheritic than has been supposed. Many such cases, early treated with antitoxin, run a much milder course, and the cornea is generally saved, with consequent preservation of vision. The author regards with suspicion rapidly progressing infiltration of the cornea, unassociated with any very marked conjunctivitis, since bacteriological examination, in such cases, has several times proved that the pathological process was due to an infection with Klebs-Loeffler bacillus. Two cases are reported, the first illustrating the benefit derived from early and persistent use of antitoxin in a typical case of diphtheritic conjunctivitis, and the second a diphtheritic infection in which the conjunctival disturbance was very slight, while that of the cornea was severe and rapid. In the first, that of a healthy boy, *æt.* 3, red eyes were noticed the 21st of the month; Standish saw him first the 23d. Then considerable lachrymation, palpebral conbral conjunctiva velvety. The 24th, P. M., the velvety surface had somewhat smoothed and diphtheria suspected. 25th, distinct membrane on conjunctiva of upper lid of each eye; the swelling of the lids so great that they projected nearly half an inch over the under lids upon the cheek. At 3 P. M., 3½ cu. cent. of Boston antitoxin (full adult dose 5) injected. The morning of the 26th no membrane on conjunctiva of right lid, and the one on the left lid shredded off easily, except a small patch in the center of upper lid. At noon, however, condition markedly worse; lids again stiff and boardlike; conjunctiva thick, with brown and brawny infiltration over tarsal surfaces, and thick membrane had reappeared over large areas. At 10 o'clock, 5 cu. cent. of antitoxin had been injected. By 3 o'clock the lids' condition had much improved; they were soft and almost flexible. Improvement continued through the night, but by the next noon the morbid conditions had been resumed. Then apparent that antitoxin exerted an immediate favorable influence on the course of the disease; that this effect was evident four or five hours after injection, but had disappeared twenty hours after injection; accordingly it seemed that injections ought to be made once in sixteen hours. Accordingly 5 cu. cent. of antitoxin were injected every sixteen hours during the 27th and 30th, inclusive, nine injections in all. From the time when this treatment was instituted the eyes progressively recovered. Membranes shredded off; brawny infiltration did not return. Patient entirely well by the 12th of the following month.

Second case shows only how virulent may be the diphtheritic infection with scarcely a trace of conjunctival disturbance, the disease confining itself to the cornea. There was in it absolutely no diphtheritic infection of the conjunctiva of the lids. The author notes three other cases in which cultures showed that the Klebs-Loeffler bacillus was the pathological agent, producing ulceration of the cornea; in all these cases injection of antitoxin arrested corneal necrosis. His conclusions, from the experience narrated in the article are:

1. All cases of purulent conjunctivitis should have their diagnosis based upon the bacteriological infections and not upon clinical appearances.

2. That diphtheritic conjunctivitis may be present in localized areas, without the conjunctiva, as a whole, being affected.

3. Ulcers of the cornea, with exceedingly rapid necrosis of the corneal tissue, may be due to infection with the Klebs-Loeffler bacillus.

4. Antitoxin favorably affects both the conjunctival disease and the corneal necrosis. C. M. C.

Leprosy Treated with the Carrasquilla Serum. — By Dr. F. Buzzi, Berlin *(Deutsche med. Wochenschrift, Oct. 14, 1897).* A brief report of a typical case of Lepra maculo-tuberosa. The patient was a boy of 15, who came to Berlin (from South America) in the fall of 1891. Father and mother had not had leprosy, but grandmother had died after an illness of fifteen years, of a disease called in South America "Mal de San Antonio," a mild form of leprosy. The symptoms in this case were well marked: hypertrophy of the skin of the forehead, cheeks, nose, chin, ear lobes, disseminated nodules all over the face, some as large as peas; elephantiasis of the distal ends of extremities; here, too, many nodules, specially on ulnar surfaces of arms, along upper parts of tibiæ; also rough brown pigmented spots on the extremities, and buttocks; marked glandular swelling, particularly of inguinal and axillary glands. All known internal and external remedies were tried without result. In 1892 tuberculin was used, which made the condition worse, causing abscesses at points of injection and in axillæ. The Carrasquilla serum was used from 7 February until 9 June, 1897. Twenty-six injections were given in buttocks, beginning with 0.03 c. c. m., increasing to 3.25 c. c. m. In all, 42 c. c. m. were used. The injections were given at first twice a week, later once, and several times at intervals of two weeks. The author sums up his experience with the serum as follows: The changes described by Carrasquilla after the injections, that is, the redness and swelling of the lepra nodules with the resulting desquamation and absorption or softening and ulceration, he could verify. The free desquamation around the pigmented areas and fading of the pigmentation was also noticed; the elephantiasis of the extremities was markedly diminished; the nails, which before had merely been irregular epidermis masses, presented a more normal appearance. The areas of alopecia of the head were for the most part covered with a new growth of hair, and were disappearing more and more. Cicatrices had formed where ulcers on the hard and soft palate and uvula had been; ulcerations in the nose had much improved. The general condition was much improved, increased appetite and weight (from 79 to 91 pounds). In conclusion, the author states that although the view of Carrasquilla, "that the pathogenic action of the lepra bacillus was checked by the very first injection," could not be verified, the *present* results were so much better than had ever been obtained with any other method of treatment, that he at any rate, contrary to other unfavorable opinions, had to commend the remedy.

C. F. T.

Enteroptosis. — *The Boston Medical and Surgical Journal (September 30, 1897)* contains papers on this subject by Arthur K. Stone, F. B. Lund and Mary P. Dole, together with reports of the discussions in the Boston Society for Medical Improvement and the Suffolk District Medical Society. Dr. Stone refers to the large number of out-patients in hospital service, in whose cases no definite diagnosis is made, and includes the operated cases in whom no relief of general symptoms has followed the correction of some minor pelvic difficulty. He believes that a large number of these patients, with vague symptoms of neurasthenic or dyspeptic character, are suffering from splanchnoptosis, or, more generally, the special division of this disorder known as enteroptosis, or Glénard's disease. In enteroptosis, the intestines, both large and small, are always prolapsed, usually also the stomach and kidneys. The result of the prolapse is the impairment of the function of the organs involved, resulting in mechanical dyspepsia. The causes are numerous. A few cases are probably due to congenital conditions, increased by bad hygienic measures of dress in early life. A few are distinctly traumatic. The greatest number are of slow development, and are due to relaxation of the muscular walls. The diagnosis is often difficult. Pulsation of the abdominal aorta is a very suggestive symptom of enteroptosis. If there are lax abdominal walls and a pulsating aorta, the outlines of the stomach should be determined and the pancreas palpated. Glénard found a transverse cord, which he supposed was the prolapsed colon. Search should be made for movable kidney. Laxity of the pelvic floor and a collapsed rectum, partly filled with nubs of inspissated fœces, lends completeness to the clinical picture. Glénard has stated that a valuable diagnostic sign is to be found by standing behind the patient and holding the thumbs firmly against the sacrum, while the under parts of the hands are pressed as deeply as possible behind the symphysis and ilium, and if the patient experiences a sense of relief from the dragging sensations by this supporting of the intestines, it may be concluded that the case will be relieved by appropriate treatment. Treatment consists in an attempt to hold the prolapsed organs in their normal position by means of an abdominal band and proper exercise of the muscles for the restoration of their normal tone. Secondary symptoms may also require attention.

Practical Therapeutics.

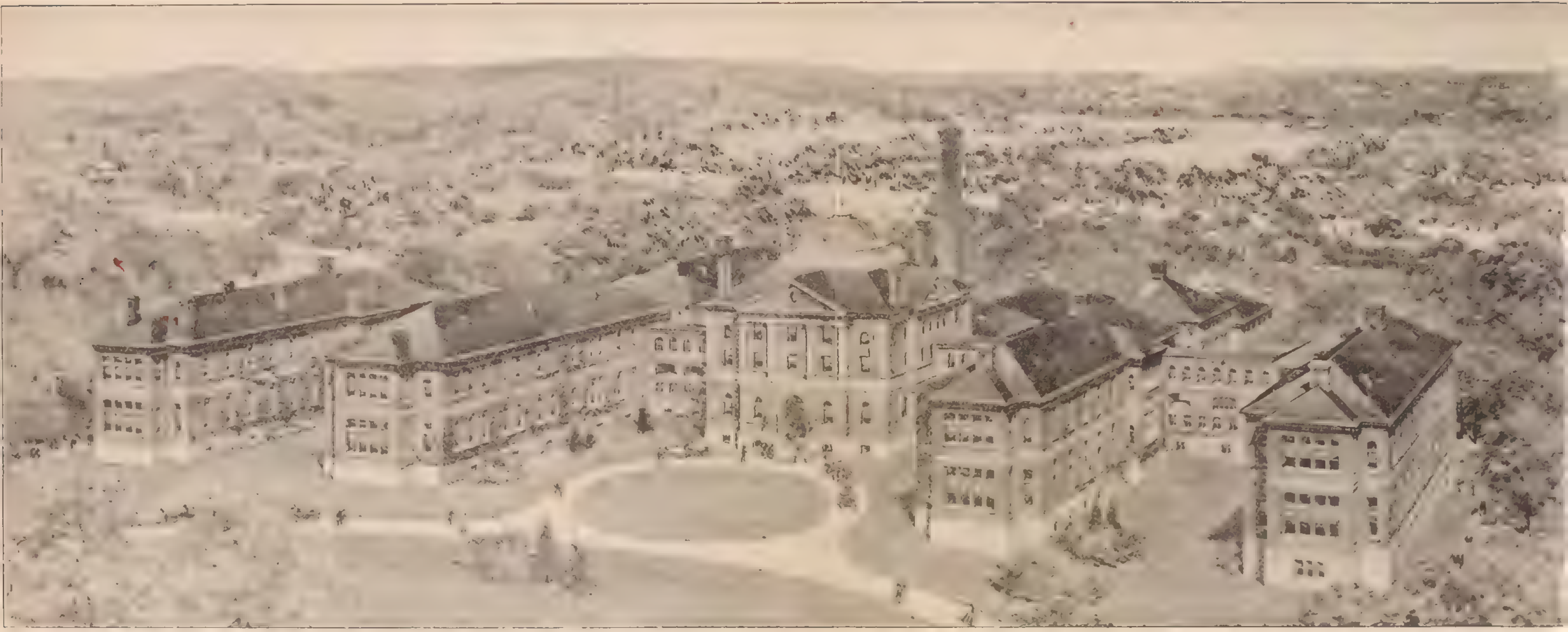
Pruritus Vulvæ. — Herman, in the *British Medical Journal*, November 20th, 1897, divides the causes of pruritus vulvæ into five classes: (1) Adventitious, due to pediculi, dirt, worms, pessaries; (2) skin diseases — eczema, herpes, furuncle, follicular, urticarial and diabetic dermatitis; (3) irritating discharges — gonorrhœa, cancer, senile endometritis, and also cases where no visible discharge was seen; (4) venous congestion due to heart, lung or liver disease; (5) nervous. Treatment: Class 1 — White precipitate ointment for pediculi; absolute cleanliness and changing of material of pessaries. Class 2 — Eczema usually affected fat elderly women and those pregnant; possibly it depended on a parasitic micro-organism; in diabetes it was especially frequent. In the former warm hip baths, with liquor carbonis detergens (Wright's) added, and powdering the parts with boric acid. In the latter general treatment was required. Herpes Zoster was not amenable to treatment. Follicular pruritus was best treated by squeezing out the contents of the follicles and applying corrosive sublimate 1 to 2,000. Urticaria was very rare. Class 3 — Sedative and antiseptic washes to the vagina, with sedative powders to the vulva, as a saturated solution of borax and dermatol powder and boric acid. When these fail, a strong carbolic lotion 1 to 7. Class 4 — The treatment is the same as just given, together with general treatment. Class 5 — Pruritus in aged women was sometimes a symptom of degenerative changes in the nervous system, and treatment usually failed.

A New Dressing for the Umbilical Cord. — Rochon (*Sem. Med., Aug.* 25th, 1897) urges strongly picric acid as a dressing for the cord. It is harmless, antiseptic, restrains too rapid desiccation, which is the usual cause of hemorrhage, and allows the cord to separate about the seventh day with a hard and complete cicatrix. The dressing consists of absorbent wool soaked in five per cent. picric acid, squeezed out carefully and covered with cotton. The dressing should be changed every two or three days, or oftener if soiled.

Treatment of Eczema by Picric Acid.— Brousse (*Journ. de Méd., Oct.* 10th, 1897) recommends picric acid in acute eczema, either primary or occurring in a chronic case, especially with a tendency to epidermic ulcerations, and in the infantile seborrhœic or impetiginous eczema. A saturated solution of picric acid is painted on the affected parts, extending slightly beyond the affected area, which is covered with a compress soaked in the same solution, and then with wool. This is allowed to remain for two days. The skin should be previously cleansed with an antiseptic to prevent suppurative organisms from affecting the diseased skin during the time of treatment. This treatment is contra-indicated in chronic cases, and generally where there is epidermic thickening. The staining of the picric acid can be removed by washing with a saturated solution of lithia carbonate.

To Illustrate Dr. Vander Veer's Article on "A Description of Hospital Buildings on the Pavilion Plan."

Albany Medical Annals, February, '98



Private Patients' Pavilion. Private Patients' Pavilion. Nurses' Home Administration Building. Service Building. Free Patients' Pavilion. Operation Building Free Patients' Pavilion.

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A DESCRIPTION OF HOSPITAL BUILDINGS ON THE PAVILION PLAN.

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[*With Illustrative Plates by the Architect, A. W. Fuller.*]

REQUIREMENTS.

It is proposed to erect buildings that shall provide proper accommodations for a total of about one hundred and eighty-five patients, one hundred of whom shall be free patients and the remainder private or paying patients. The plan must be so arranged that the free departments and paying departments shall be separate. A distinction must be made between medical and surgical patients; furthermore, wards or groups of rooms should be provided for the childrens' department, gynæcological department, obstetric department and isolation department. Each of these departments should be grouped about a central or administration building, and the arrangement and environment should be such as to secure the best results to the patients, as well as the most economical and convenient conditions for the attendants.

There should be an operating amphitheatre for lectures to students, with adjacent private operating rooms. An outpatients' department should be provided, which should be as completely isolated from the hospital itself as the conditions will permit. The design should provide adequate accommodations for the officers, nurses and male and female help, as well as for such service departments as are necessary in the proper administration of a hospital. The buildings should be constructed and equipped in accordance with the best thought of the age.

GROUPING OF THE BUILDINGS.

The arrangement of a group of buildings for the purposes outlined above is dependent on several conditions: First, the location and extent of the plot of ground which forms the site; second, the relation of the buildings to the points of compass; third, securing to all parts abundant sunlight and ample circulation of air; and fourth, the disposal of the different departments in such a manner as to satisfactorily solve the various problems of the administration of the whole.

The conditions which present themselves in the present instance are nearly ideal. The site is ample in extent, suburban in location, with a gentle slope eastward, and fronts towards the south. The character of the site naturally suggests the arrangement shown in the design, that of a series of two-story pavilions pointing southward, connected by enclosed corridors and grouped about a central administration building, with other subordinate buildings in the rear. It is undesirable to extend the pavilions to a greater height than two stories on account of the loss of light and circulation that results in the lower stories. The open courts between two-story pavilions are much dryer than between taller buildings. A two-story building is more safe to use for hospital purposes than a higher building, besides greatly reducing the amount of necessary stair-climbing and cost of maintenance. By no means the least consideration that calls for the selection of comparatively low buildings is the improvement in the general appearance of the group. For these and other reasons it has been found desirable in nearly all of our modern hospitals to build, where not embarrassed by a limited site, separate pavilions not over two stories in height.

AXIS OF PAVILIONS.

The principles which form the basis of modern hospital planning are the result of much study in the past, with attendant successes and failures. While it is by no means true that the process of evolution in this respect has ceased, yet there are certain principles that have become so established in the best hospital planning that they no longer seem debatable.

Thus the method of locating ward buildings so that the longitudinal axis shall be north and south has proven so well based on true principles as to require little explanation and no apology. By this means sunlight each day on three sides of the ward is secured, and the shadow cast by the pavilions will be least objectionable. The natural result of the application of this principle is to place the ward buildings in parallel rows, as shown in the design, the space between the buildings being of sufficient width to prevent the shadow of one building from interfering with the light of the adjacent one. The space between the pavilions should average from fifty-five to sixty feet.

PLATES.

The plates which accompany this description, and which show clearly the general features of the design, are five in number:

A basement plan.

A first-story plan.

A second-story plan.

A third-story and roof plan.

A front or south elevation.

BUILDINGS.

The buildings shown are eight in number, as follows:

A three-story central administration building.

A two-story private patients' pavilion (lettered Pavilion A on the plates).

A two-story private and private ward patients' pavilion (lettered Pavilion B on the plates).

A two-story free ward building (lettered Pavilion C on plates).

A two-story free ward building (lettered Pavilion D on the plates).

An operation building and amphitheatre.

A three-story nurses' home.

A service building.

All of these buildings are united by corridors two stories in height.

THE EXTERIOR.

The character of the building and the general purpose of its various departments are well expressed in the exterior, a sketch of which is herewith presented. The method of treatment lacks neither destiny nor modesty, and is an adaptation of the classic forms and detail which were so satisfactorily used by our forefathers during the Colonial period.

ADMINISTRATION BUILDING.

This building, which is the official head of the entire group, is three stories in height, and is located in the center of the hospital, and from it radiate corridors connecting with every department. In the center of the front is the main entrance leading to a large dome-lighted rotunda, and spanned by a dignified and imposing arch. Here are admitted all visitors and all except private patients, dispensary patients and ambulance cases. Visitors will be shown to the visitors' reception and waiting-room. Persons applying for admission to the hospital will be ushered into the patients' reception and waiting-room, and the case examined more fully, if need be, in the patients' examination-room, from which a bath-room opens. For the use of the doctors, three rooms, a sitting-room, a library and a room for microscopic examinations, are provided. A large front room is assigned for the use of the governors. The superintendent has two connecting offices, one for private conferences, the other for the transaction of more public business. The latter room contains the central telephone station, by which means communication is maintained with every department of the entire plant. The matron's room and the drug dispensary are back of the rotunda. The latter room has a small stairway leading to the drug store room in the basement. Directly opposite the entrance is the central stairway and elevator, giving access to all the rooms above.

The first and second floors of this building are level with the first and second floors of all the pavilions, the height of all first stories being fourteen and one-half feet in the clear.

The second story of the administration building contains the living rooms for the superintendent and the staff. For the former a group of five rooms are provided. To the staff five bed-rooms and a bath-room are assigned. A large pleasant dining-room for the officers, with pantry and dumb-waiter service, is provided on this floor. One of the rooms assigned to the superintendent may be fitted up as a superintendent's dining-room. From the rotunda of this second story, leading east and west, are large light corridors conducting to the other buildings.

The third floor of the administration building, to which access is given by the central staircase and elevator, is to be used for the obstetric department. This department has two sections, private and free, with separate bath-rooms and halls for each section. There are three private rooms pleasantly located at the front of the building. In the free section are two small lying-in wards, a small dormitory for waiting women, a work-room used by the waiting women for light work, and a well-isolated corner room, with intervening lobby, to be used in delivery. A corner dining-room, with pantry and dumb-waiter service, is conveniently placed. The nurse in charge of this department will have a sleeping-room, bath-room, office and store-room for her use.

The basement of the administration building will be used by the housekeeper, who has a distributing-room from which open three large, light storage-rooms for stock, groceries and dry goods.

Two additional store-rooms are assigned to the kitchen supplies, and will be in charge of the chef.

PAVILION A.

As this building is to be devoted to the pay-patients' department it has been located at the southwest corner of the group, and presents a most favorable outlook. The private patients will not enter the hospital at the main entrance, but for their use a private entrance, with a reception-room, is provided. As the axis of the building is north and south, each of the thirty private rooms will have sunlight during some part of the day. The rooms are all pleasant and well lighted, averaging ten feet by thirteen feet six inches. Eight of the rooms have open fireplaces, and two have private bath-rooms opening directly from the rooms. The central corridor is eight feet six inches wide, is well-lighted, and terminates in a broad solarium at the south front. A noiseless electric signal, with a push button at the head of each bed, will summon a nurse at the wish of the patient. Each of the two stories is provided with a room for the preliminary examination of patients. A serving-room, with dumb-waiter service, is near the main corridor, and contains a refrigerator, a steam table and other appliances for the final preparation of food which comes from the kitchen, and which is here kept warm and fresh until needed, when it will be daintily arranged on trays and carried to the patients' rooms.

Each floor will contain a nurses' room, to be used as a duty room, and a linen-room for supplies. On each floor large, light lavatories and toilet-rooms are provided, separate sections being arranged for men and for women. These lavatories are fitted up with the best appliances, and contain bath-tubs, shower baths, wash basins and water-closets. A separate section contains a clothes chute for dirty linen, a dryer, a maids' clinical sink, and a water-closet for the use of the nurse. All of this plumbing is well grouped, has an abundance of light and natural ventilation, as well as an independent vent shaft, and is so arranged that the probability of odor passing into the corridors is reduced to a minimum.

The arrangement of the toilet sections throughout the entire hospital is well worthy of special note, as the problems of ample light, perfect ventilation (both natural and systematic), convenience of access without too apparent directness, and protection of the adjacent rooms and corridors from odors, seem to be worked out in a thoroughly satisfactory manner. It will be noticed that the scheme of projecting the walls of the toilet sections affords means for providing cross ventilation.

PAVILION B.

This building, which is forty-five feet west of the administration building and fifty-five feet east of Pavilion A, will be used by a class of patients who, while not caring to incur the expense of occupying the private rooms in Pavilion A, are willing to pay for the privilege of comparative privacy to be had in a three-bed or four-bed ward. For the sake of convenience, as well as economy in space to be devoted to the toilet section, the men are placed on the first floor, the second story being reserved for women. The building makes provision for forty-two patients, thirty-one of whom are private ward patients. A portion of the space on each floor is divided into strictly private rooms. Each floor contains a nurses' duty room, with adjacent linen-room, an examination-room, a serving-room, and at the extreme south end a solarium. The lavatory section is equipped and arranged on the same principles as that in Pavilion A.

The basements of Pavilions A and B are dry, well-lighted cellars, and are not finished or divided.

PAVILION C.

Forty free male patients will find accommodations in this two-story building, which is forty-five feet east of the administration building.

The first story will be used for surgical cases, the second story being reserved for medical cases. The wards occupy the southern two-thirds of the building, and are thirty-three feet by seventy-six feet, and fourteen and one-half feet high. At the southern end of the wards are generous solariums, with broad open fireplaces. The beds are symmetrically arranged in pairs, with a broad low window between each pair of beds. The axis of the ward will result in securing sunlight through windows of each side for a part of every day, and through the southern windows all of the day. The ward dependencies at the north end of the building comprise, besides the toilet section, a nurses' duty room, with window overlooking the ward, and adjoining this room is a recovery-room, or room for patients requiring more private attention. Back of this is a linen-room, with adjustable racks, and next to the main corridor is an examination-room. Each floor contains also a dining-room for the use of convalescents, and a serving-room, with dumb-waiter, gas range, refrigerator and sink. All of these rooms are well lighted, and so arranged as to render the administration of the work most agreeable. The scheme of toilet-room conveniences is equal in every way to that suggested for Pavilions A and B, and the lighting and ventilating of these sections will be quite as successful as in the toilet-rooms already described. It is not economy to save money by providing cheap plumbing. It will be noticed that the patients have direct access to the toilet department without traversing long corridors, and that this result is obtained without increasing the liability of contaminating the wards or corridors with odors from the toilet section. There is provided a separate toilet-room for the nurses and a small well-lighted closet for the maid's clinical sink for the cleansing of vessels.

The basement of Pavilion C contains a large light room, with adjustable racks and ventilated lockers, for the reception of the patients' personal clothing. Any articles of value which patients wear or carry at the time of admission to the hospital will be kept for them in the vault adjoining the superintendent's office in the administration building.

PAVILION D.

The two-story building at the extreme eastern end of the group will be used by forty female charity patients. The surgical cases will be assigned to a large ward on the first floor, a similar ward above being occupied by the medical patients. The wards, with their dependencies, are in all respects similar to the wards and dependencies of Pavilion C. The east end of the main corridor on each floor will be used as a waiting-room for friends of the patients who call. It will be noticed that in the matter of toilet-rooms and other ward dependencies the service is complete and independent for each department, thereby avoiding confusion or too much informality.

DISPENSARY DEPARTMENT (PAVILION D).

In the basement of Pavilion D is located the dispensary or out-patients' department of the hospital. This department is open daily for free attendance on the needs of patients whose cases require brief or intermittent attention. As there is always a considerable amount of bad odor, dirt and confusion in connection with such a department, it has been considered wise to isolate the rooms allotted to its uses from the hospital itself. For this reason the entrance to the dispensary is entirely separate from the main entrance and placed at the east side. Access from the hospital itself may be had by the medical staff, with their assistants, through the vestibuled entrance at the north end of the dispensary department. The floor of the dispensary is above the grade at all points, and the walls are built with an air space to insure dryness. There is also below the floor an asphalted ventilated air space of two feet in height. Special and separate means of ventilation will be provided for this department.

The patients will enter a general waiting-room at the north end, whence they will be ushered to one of the six consultation rooms, and their particular trouble treated or prescribed for by a specialist. The consultation rooms are all large and well lighted. Separate toilet-rooms for men and women are provided. Special prescriptions will be filled at the drug department, which has trolley connection with the dispensary.

OPERATION BUILDING.

Directly back of Pavilion C, at the northeast corner of the group, is the operation building and amphitheater. A short vestibule separates the building from the main corridor, forming a perfect screen to both hearing and vision. Here is provided a convenient and suitable entrance for ambulance cases, the ambulance approaching from the rear and not attracting the attention of occupants of the pavilions. At the forward end of this building are two recovery rooms, and between these and the amphitheater are two etherizing rooms. All of these rooms are of good size and well lighted, and have double folding doors. The operation building corridor is of unusual width, thus affording ample space for turning litters and wheel-cots.

At the east side of this corridor are two large private operating rooms, which project past the face of the building above, thus giving opportunity for generous skylight as well as side light. A surgeons' dressing-room adjoins these private operating rooms, and opens also from the main corridor. It will be noticed that surgeons using the private operating rooms have access to the sterilizing-room and instrument-rooms without passing into the amphitheater and disturbing lectures or operations which might be in progress.

The amphitheater occupies the northern half of the building, and contains seats arranged in semi-circular form for three hundred and twenty students. These enter from the rear and have immediate access to a large light coat-room and a toilet-room, and pass up the stairway to the amphitheater above, there being no access whatever from this source to the rest of the building. The seats are arranged on a steel construction pitched at an angle of forty-five degrees, terminating in an operating well at the level of the main floor. The amphitheater has plenty of side windows for light and ventilation, while over the operating table, and extending well to the north, is a large skylight, arranged so as to be safe from leakage or condensation, and flooding the room with light. The operating space, with the working space just back of it, is provided with the usual furnishings, and is tiled with non-absorbent tiles. Provision is here made for drawing any odors downward and out. At the east side of this working space are the instrument-room and instrument-cleaning room, both of ample size and well lighted. North of these, with a short corridor opening directly from the operating-room and connecting also with the private operating-rooms, is the sterilizing-room. The attendant nurses have a supply and work room at the west side of the working space. The finish of this entire amphitheater and all its departments will be equal to the best modern work so far as practical service is concerned.

While the amphitheater is but one story in height, the southern part of the operating building is carried up, forming in the second story a children's ward with eight cots, and private rooms adjoining with three cots. This department has a nurses' duty room, a serving-room and a complete toilet section similar to those described for the other wards.

The isolation department is above the children's ward, and is reached by an outer iron staircase opening from the corridor. To this department are removed suspicious cases or cases of severe delirium. The floor is so divided as to secure three distinct departments entirely separate from each other, each department containing a room for the patient, with an adjoining bath-room, a sleeping-room for the attendant with an adjoining toilet-room, also a kitchen and a supply-room. In one of these three departments the one attendant will care for three patients. In the other two departments the isolation is absolute.

The basement of the operation building is an unfinished dry and light cellar, and contains the stacks for the furnishing of fresh air to the amphitheater.

NURSES' HOME.

Directly back of Pavilion B, and separated from the main corridor by an open bridge (enclosed with sash in winter), is the house for the nurses. The first two stories are set aside exclusively for their use, while the third story has separate stairways and entrances from the main corridor, and is used by the female help. Sleeping-rooms are provided for forty-seven nurses, and in the third story for thirty-two female servants. On each floor is a large, light, well-ventilated toilet-room. The superintendent of nurses has two rooms and a private bath. A central staircase provides communication between the first and second stories. At the foot of the staircase is a side entrance. On the first floor is a large dining-room, with an adjoining serving-room, and opposite is a general sitting-room and a library.

The corridors are of good width and well lighted, and the bedrooms are of fair size and all have ample light. The stories are nine and one-half feet clear height, thus permitting the cornice and roof to be of no greater height than the two-story pavilions. The basement of this building is a dry, light, unfinished cellar, and may be divided if desired into store or trunk-rooms.

CORRIDORS.

The corridors are designed to be the arteries of direct communication between all departments of the hospital. These are light and airy, and the southern walls are pushed three or four feet toward the south to afford additional sunning space for convalescents. They will be free from draughts, as doors are placed at each end of each section. Between Pavilions A and B and between Pavilions C and D are depressions on the north side of the corridors, giving good space for open iron staircases from the basement to the second story. If desired, the rooms of all the connecting corridors may be made flat with parapets so as to serve as roof gardens for the use of the children or other convalescents.

SERVICE BUILDING.

The best interests of economy and ease of administration demand that the service building be centrally located, and that its several departments be so planned as to prove of greatest convenience and in no way a nuisance. As the site is not contracted, these departments should be in a separate building, and the most objectionable sections should be the farthest removed. For these and other apparent reasons the service building has been placed in the rear of the administration building, connection with it being had solely through the basement, with an intercepting ventilated corridor as a still further precaution against the transmission of odors. By a slight incline in the basement corridors the floor of the kitchen department is placed level with the grade. The kitchen itself is a high, well-lighted, generous room, with the cooking apparatus in the center to insure cleanliness, as well as to add to convenience in moving about. Opening from the kitchen is a one-day's supply-room, a meat-room, and between the kitchen and the main building is a special diet or training kitchen and a serving-room, with a complete equipment for rapid service. A bakery with a baker's oven, and the two dining-rooms for the male and female help are conveniently arranged. Forward of these and across the outer court are the toilet-rooms. The odors from the ranges will be carried to the vent-flue by a large hood completely covering the apparatus, while the odors that still remain will be carried up through a shaft to a ventilator above the roof, where accelerating coils will rapidly remove them. The food is prepared in the kitchen, and is taken through the cellar corridors on wheeled heated food-trucks, and sent up the different dumb-waiters to the serving-rooms. Thus the odors of cooked food are kept out of the upper rooms and corridors. It will be readily seen that this system of distributing the food does away with the wheeling of trucks through the corridors of the first and second stories, and at the same time is a most economical method of service. A portion of the second story of the kitchen building is divided into sleeping-rooms for the male help.

LAUNDRY.

(In the Rear of the Service Building.)

The best modern hospitals that are provided with a fair amount of ground build separate buildings for the laundry work, and remove these as many score or hundred feet away as circumstances will permit. It seems that the "odors of wash-day" are not subservient to any known law, and diffuse themselves upward, downward and horizontally with remarkable persistence. While we may not be permitted, for motives of economy, to erect an entirely separate building for this purpose, still we should place the laundry department as far to the rear as we can, and by entering only from the outdoor air from east and west corridors, and walling up the rear of the kitchen solid, without openings, we may reasonably hope to accomplish the best results. The soiled linen will be thrown down the clothes chutes that open from the toilet sections of the different departments, and will be collected on trucks and conveyed through the basement corridors to the outer entrances of the laundry. The clothing is first sterilized in the large laundry sterilizer, and then taken to the washing machines, then to the mangles and ironing tables, and finally brought to the linen-room and mended, sorted and piled ready for redistribution. The odors of the laundry will be carried to a large ventilating flue in connection with the main boiler flue by a large galvanized iron duct.

A crematory is provided for the consuming of garbage. Space is allotted also for engines and dynamos in case they are put in.

HEATING AND VENTILATION.

The apparatus for heating and ventilating will be placed in the boiler-room, at the west of the laundry department. Here will be set up and connected four horizontal return tubular boilers, which will provide steam and power for the entire hospital.

The system of heating and ventilation will be a combination of direct-indirect and direct and indirect. The steam pipes will be carried through the cellar corridors to central points under the pavilion, and thence up, supplying all parts. By the modern method of protecting pipes the loss of heat is not perceptible. Where the indirect system is used the steam will be sent into jacketed coils in the basement, which are well supplied with fresh air, and this air, warmed by the coils, will be sent up to the different rooms. Where the direct-indirect system is used the registers will be set over ventilating register boxes, which will take fresh air directly from outside. Each building will be provided with a large brick vent-shaft, with metallic ducts leading to it, and with metal ventilators with accelerating coils above the roof. In the wards a ventilating register will take foul air from the floor space under each bed. All corridors will be ventilated, also all rooms that are heated by the indirect or direct-indirect systems.

CONSTRUCTION, FINISH AND EQUIPMENT.

All of the buildings will be constructed with stone foundation walls on stone bases, and with a brick superstructure. The main cross walls and bearing walls will also be of brick. The wards will be free from columns. Other and wider buildings will have steel columns, with lines of steel girders to support the floors. The floors will be constructed in part of steel beams with fireproof filling, and in part with three-inch splined planking with asbestos above, in the manner of " slow-burning construction." The roofs will be of tin. All ceilings and all steel supports will be securely fire-proofed. All exterior features not of brick will be either stone or metal.

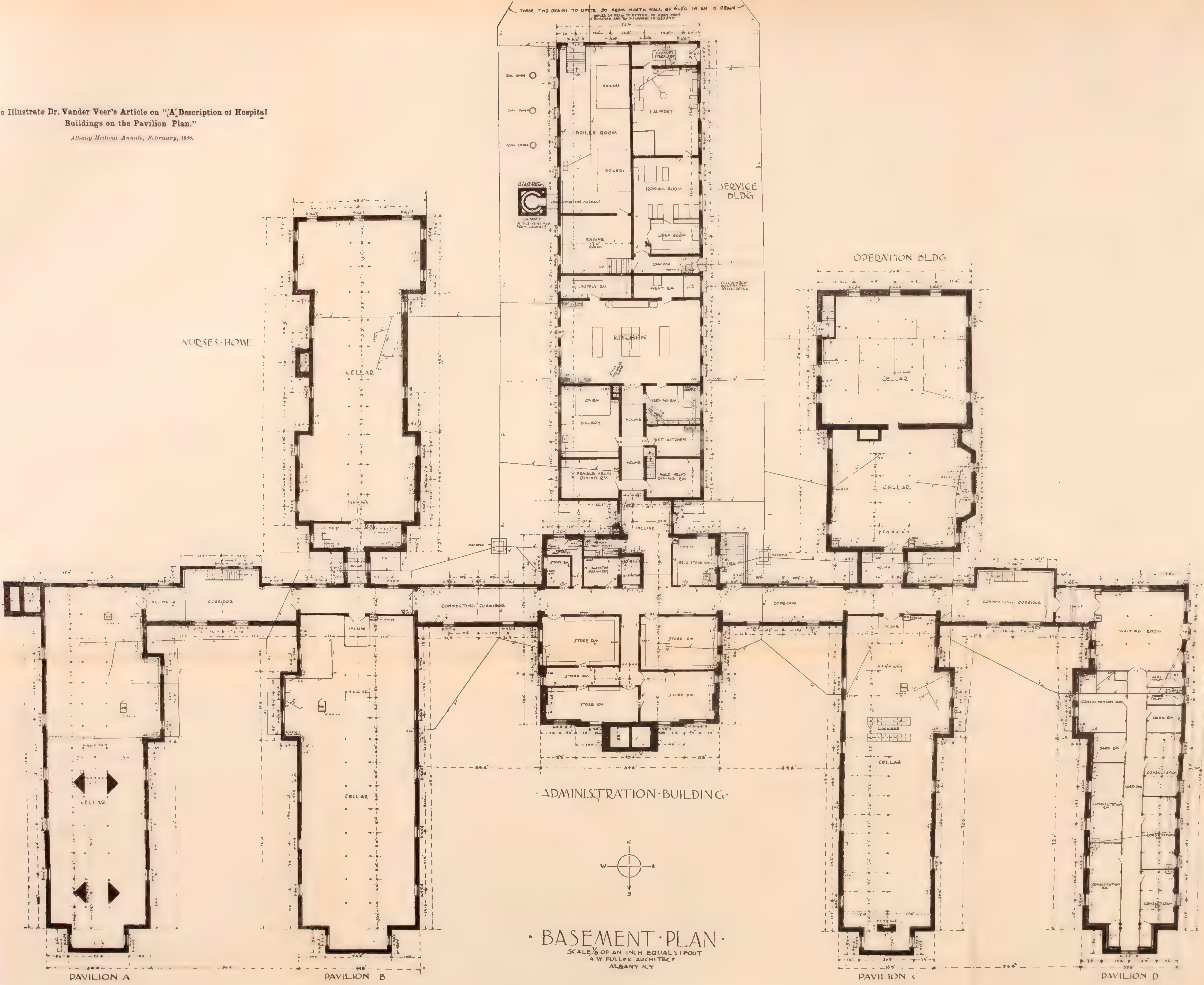
The essential conditions of rooms and halls designed for hospital use are ample light and ventilation, no dampness, no angles or moldings to catch dust or bacteria, little or no woodwork as a screen for vermin, hard non-absorbent, polished surfaces, no decoration save that of honest material in quiet colors, broad doorways and windows, and all so planned and built as to require a minimum of care or repairs. In the design shown a system of construction and finish is intended as will accomplish these results. The floors and walls will be of hardest material, free from spaces for vermin. No wood bases or wainscots will be permitted. All angles of the floors, side walls and ceilings will be rounded, the window jambs will be rounded and will be without wood trim of any kind, the doors will have flush panels with the plainest hardware, the plastering will be of adamant, or equally hard material, and all parts will be kept as simple and open as possible, so that the work of inspection shall be an easy task, and no excuse be found for bad housekeeping.

The plumbing will be serviceable, sanitary, open, direct and permanent, and the piping, traps, ventilation of traps and pipes, will be done after the latest sanitary methods. The toilet-room walls will be painted and the toilet-room partitions will be hammered glass or marble, the floors being marble or tile. The drain will be outside of the buildings, and will be carried to a large intercepting trap.

All parts will be wired for electric bells, electric signals, telephone system and electric lighting.

To Illustrate Dr. Vander Veer's Article on "A Description of Hospital Buildings on the Pavilion Plan."

Albany Medical Annals, February, 1898.



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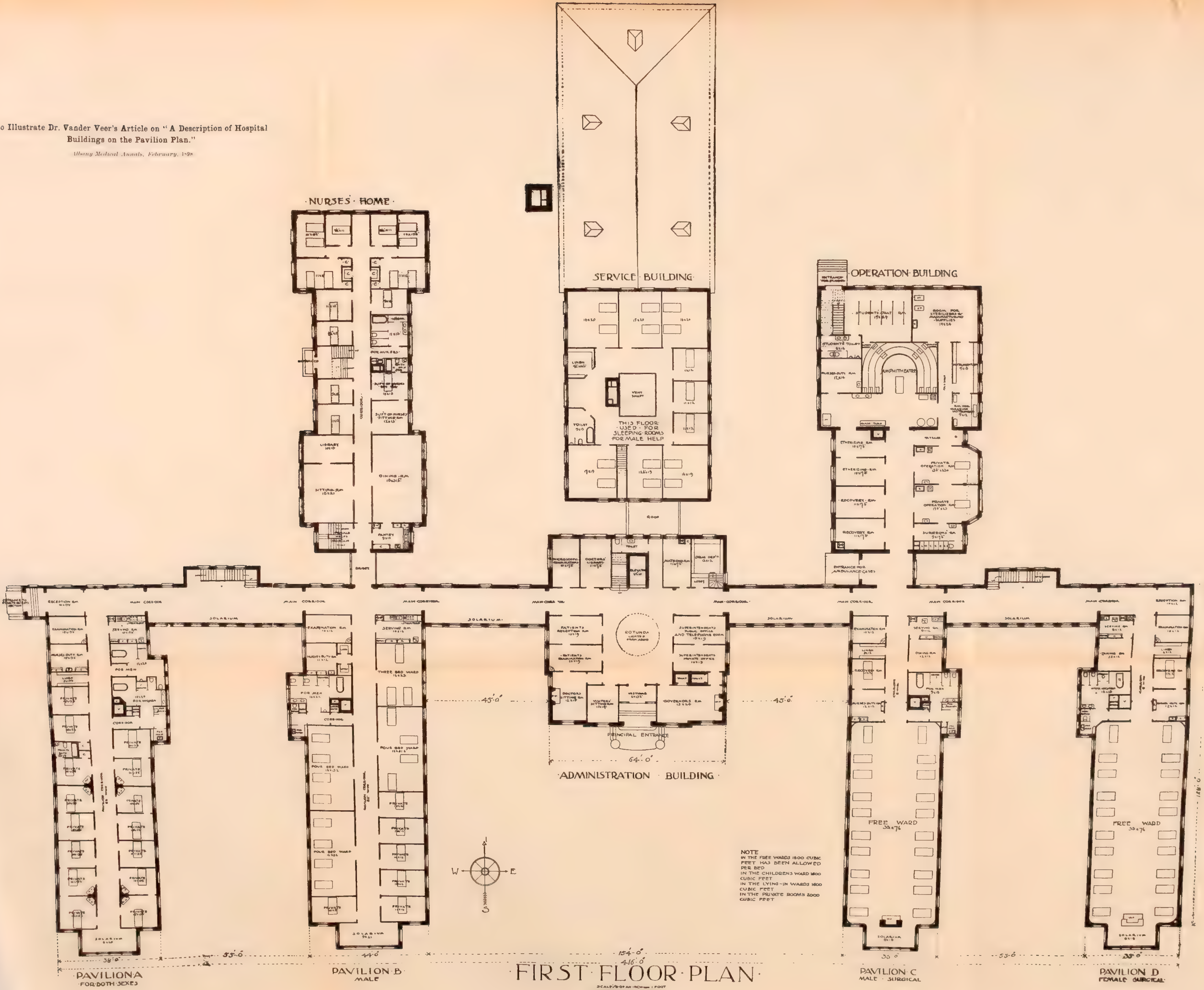


NOTE
IN THE FREE WARDS 1800 CUBIC FEET HAS BEEN ALLOWED PER BED
IN THE CHILDRENS WARD 1800 CUBIC FEET
IN THE LYING-IN WARDS 1800 CUBIC FEET
IN THE PRIVATE ROOMS 2000 CUBIC FEET

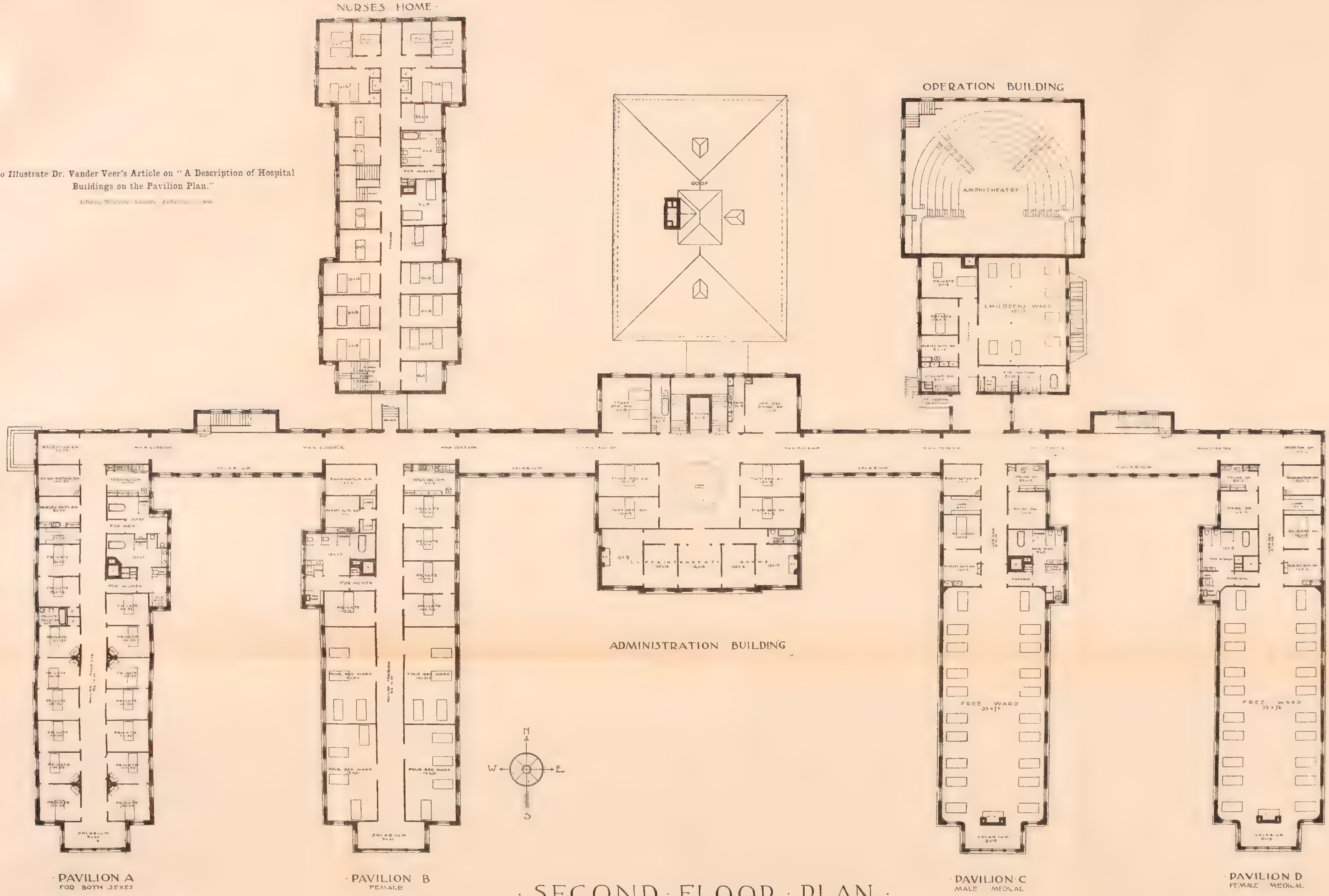
·FIRST·FLOOR·PLAN·

SCALE 1/8 OF AN INCH = 1 FOOT

·A·W·FULLER·ARCHITECT·

To Illustrate Dr. Vander Veer's Article on "A Description of Hospital Buildings on the Pavilion Plan."

Albany Medical Annals, February, 1898.



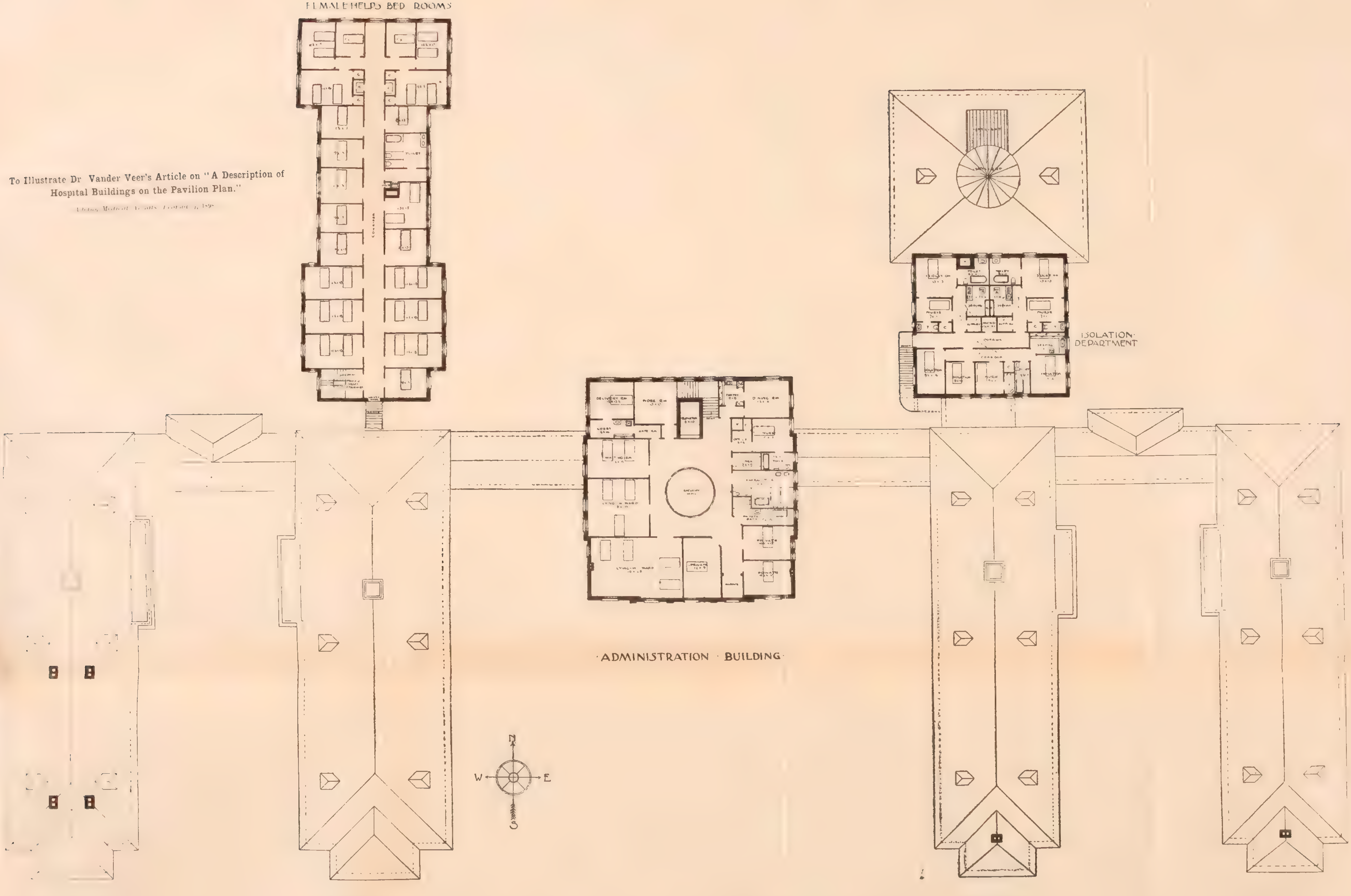
·SECOND·FLOOR·PLAN·

SCALE 1/8 OF AN INCH = 1 FOOT

·A.W.FULLER·ARCHITECT

To Illustrate Dr Vander Veer's Article on "A Description of Hospital Buildings on the Pavilion Plan."

Albany Medical Annals, February, 189[illegible]



THIRD · FLOOR & ROOF · PLAN ·

SCALE 1/8 OF AN · INCH = 1 FOOT.
· A W FULLER ARCHITECT ·

Accommodation of the Hospital Buildings.	Private Patients.	Private Ward Patients.	Free Patients.	Totals.
Pavilion A, (Males and Females)	30	0	0	30
Pavilion B, (Males and Females)	11	31	0	42
Pavilion C, Males (Surgical and Medical)	0	0	40	40
Pavilion D, Females (Surgical and Medical)	0	0	40	40
Administration Building (Lying-in Department)	3	0	9	12
Childrens' Department	3	0	8	11
Isolation Rooms	0	0	5	5
Totals	47	31	102	180
	78 Paying Patients.		Free Patients.	Total.

Number of Beds for the Staff and Other Workers.	Total.
Beds for Staff	6
Beds for Nurses	47
Beds for Female Help	32
Beds for Male Help	15
Total Number of Beds	100

NOTE. — Since preparing the plates which illustrate this paper it has been found wise to make certain minor changes in planning. These changes are apparent in the description, but are not sufficiently radical to require new plates.

For valuable suggestions which have entered into the final arrangement of the kitchen department and the dispensary department this paper is indebted to Dr. Henry Hun, of this city.

28 EAGLE STREET.

For the ANNALS

THE CONSTRUCTION OF HOSPITALS.

BY P. M. WISE, M. D.,
President New York State Commission in Lunacy.

THE GENERAL DESIGN.

In the construction of any building to be used for eleemosynary objects it is reasonable to presume that the design will embrace every purpose the institution will be expected to serve. These purposes, in a general hospital, dependent upon contributions for maintenance and extension, may be broadly stated as, first, the best practical application of space and equipment for the treatment of disease, and second, the greatest possible combination of features that will appeal to the benevolence — and *sotto voce*, the pride — of that element in the community upon which the life of the hospital depends. Its good work, and, as a prior condition, its effective and discreet organization, will have a large influence in this direction, but it is notoriously true that purse strings are opened more freely for objects that appeal to the æsthetic in our nature than for the old, the dilapidated, the deformed or homely. It is therefore well to bear in mind that although all features in a design should be subservient to practical needs, yet it is not wise to neglect the features that appeal to the public, even if they serve no absolute need. Herein lies the difference between a governmental work and one dependent upon the benevolence of individuals. I would subtract from this consideration any expenditure for ostentation, or too pretentious a display of structure without practical use. The minarets that adorn some of our charitable institutions built for a century go out of style like bonnets, and then become actually repulsive. As between one and another design, that one should be chosen which will devote its enclosed space to the best practical use, and form its exterior in the most graceful and pleasing lines.

In this consideration I fearlessly state that the artistic conception of the beauty of the curved line in structure has done very much towards spending the people's money without a corresponding return. If curves are desirable they should be created in the more mutable materials of the environment — the lawns and roads and fences — not in brick and stone where they increase the cost of construction enormously. Curves should only be used in a hospital where they serve a sanitary purpose; thus, in angles of wards a round corner can be more effectually cleaned than a square one, although a square one can be cleaned. If additional expense is not prohibitive, curves instead of right angles are desirable, but an architect should not be informed that they are indispensable. The precise method of determining the several features to be adopted in a hospital plan is by the comparative method. If there is a limit to expenditure, deduct from it ten per cent. for contingencies. With the remainder and a reliable architect there is a good basis for a beginning. Then the number of patients to be accommodated, with the number of nurses and the staff required, and the classification of patients provide a foundation upon which the superstructure of detail can be begun.

Up to this point probably there may be unity of opinion, but now there are liable to be differences. One may favor a solid block, another pavilions, others diverse plans. I believe that if all were to adopt the same precise methods of reasoning which they use in making an investment for income, the tendency would be towards agreement. In an article as short as this must necessarily be it will be impossible to cover the whole ground of varying conditions, but it may be safe to say in a general way that, if land space permits, that structure which gives the greatest proportion of light and air space exteriorly, other things being equal, is the most desirable. It is doubtful whether there will be a difference of opinion upon this point. If this be true, it would naturally lead to some form of pavilion plan, provided the cost was within the limitation of funds to be expended.

In addition to the cost of construction, another probable objection that may be urged against the pavilion plan is cost of maintenance. This item is one carefully considered by hospitals for the insane, where both the block and pavilion plans have been tested for many years, and their experience will not support this objection. Of course, if segregation in classification is carried to excess, maintenance will be a greater burden than necessary, but assuming a hospital for two hundred was to be divided into five buildings — an administration building and two pavilions for each sex — it is my belief that this objection would not apply.

Considering this matter in greater detail, it may be well to analyze the expense of maintenance likely to be affected by these several designs. It consists chiefly in division of employes, in the conduction of heat and added transportation of supplies. If there is a proper classification of patients, the first item does not count, as the same number of nurses will be needed in one plan as in the other. The only service that might require duplicating would be the dining-room, and as it is manifestly improper to mix surgical with medical cases, or the several infectious diseases, except in the stage of convalescence, duplication would be required in any plan. Moreover, the mass of dining service would be on the individual plan for bed cases, which would require the same extent of service in one as in the other design. With present methods of heat conduction, radiation is so reduced by insulation that loss in conduction is hardly worth considering, where the pavilions are reasonably near the central plant. In transportation there would certainly be an added embarrassment, but when weighed against the advantages to be gained, it is so insignificant that it also could be laid aside. Especially when it is conceived that in the division of wards forty per cent. is gained in exterior wall surface, which means an equal gain in light.

HEAT AND VENTILATION.

A mistake that is very commonly made is a settlement upon plans without considering in the original designs the avenues for heat and ventilation. A sanitary engineer has well said that in designing a hospital a system of heating and ventilation should be first planned, and then the building to surround it. It is always assumed that there will be wall space enough for flues in any event, and if flues are provided heat can be. This is fallacious. Although heat may be provided, it may not be properly circulated. The ideal hospital should have its air supply tempered before it is injected into the building, and then forced into the wards in order to insure a regular and sufficient supply. If the outer air is cold, it should be warmed only slightly above the required temperature desired for the ward, and then supplied in sufficient quantity to keep the temperature equable. If the outer air is too warm, or too humid, the air should be cooled and dried and supplied in sufficient quantity. The varying climate of

Albany should have provision in its hospital built at the present day to supply sanitary lung food for its patients, else it cannot point with pride to its achievement; and with our present knowledge and facilities and scientific appliances, no excuse exists for not providing it. I especially mention this, as in the several plans submitted thus far which I have seen I cannot conceive how a proper system of heating and ventilation can be provided. Above all, there should be avoided what is known as direct radiation. It is one of the snares to health. Even the old-fashioned stove assured some interchange of air which the direct radiator does not. This question should be entered into in detail by physicians, and not left wholly to engineers.

TOILET AND DINING-ROOMS.

A likely source of annoyance and trouble is the necessary contiguity to wards of toilet-rooms and food-rooms, but nearly the whole trouble to be anticipated from these sources can be avoided by making the air exit from these several rooms, thus assuring air currents towards them instead of from them. By increased cost of construction these rooms can be separated from wards, and cross-currents of air can be provided, but in addition to the objection of first cost is the expense of maintenance and the inconvenience, which is considerable. It has always appeared to me that the individual bed ventilation, as practiced in some hospitals, is unnecessary, if not illusive. The usual arrangement is by sub-floor ducts having an attractive force, with openings underneath each bed, the object being to have the contaminated air from each bed removed without intermixing with other. As only a very small ratio of patients soil the atmosphere to an objectionable extent, it would be preferable to provide segregation for such with separate ventilators, rather than applying the needless system to every bed in a ward. A system of ventilation must be considered in connection with the classification of patients in order to be properly adjusted.

ADMINISTRATION BUILDING.

It is usual, in the construction of any public building, to begin with the central or executive building, and make it as imposing as possible, and with the remainder of the funds build what was left undone. It would indeed be a wise proceeding to reverse the order in the construction of a general hospital, *i. e.*, build the wards and what was necessary for their proper maintenance, and use the remainder for the office building. The architectural idea, that the central feature must overtop the wings and form the apex of structure, may be an axiom of the profession and born of wisdom, but it frequently leads to abuses. If the State of New York could to-day use the sum needlessly expended in massive central structures overtopped by pinnacles, it could provide accommodation for its increase in dependents for five years hence. In any event, it would seem unwise for the Albany Hospital, with its present resources, to build a large administration building. It might lay its foundations for one, and depend upon the munificence of subsequent donors to complete it. A central building should provide only for needed offices and staff residence. For various obvious reasons neither patients nor nurses should be domiciled there. When expenditure is limited display should be avoided, as it is not in good taste and gives the erroneous impression of a magnificent provision for the staff, and provision for the sick as an incident.

NURSES' HOUSE.

Proper accommodations for nurses is equally as important as provision for resident staff. It is chiefly upon the efficiency of the nurse that the beneficent work of the institution depends, and she should be cared for as well as possible. I believe firmly in providing a separate building for nurses, and separating them from other employes and servants; yet, unless sufficient funds are available, nurses can live in anticipation, and temporary provision can be made for them. It is assumed, of course, that the ward buildings will not exceed two stories in height, and that the attic space will be unoccupied. With suitable roof construction much of this space can be made available for employes for temporary use, at least.

The operative department of a hospital should, as far as possible, be outside the building, and more particularly outside the ward buildings. A central heating and power plant is a necessity, and power should be transmitted by electricity, unless it is used in connection with the steam plant. It would be desirable also, if feasible, to have the kitchen slightly removed from the building, and in any case it should be arranged with air currents toward the kitchen, to prevent the spread of kitchen odors. I should consider a separate building for steam, power, laundry and refrigerating pump a *sine qua non.* If the topography will permit of a free and well-lighted basement, it could be used for stores and supplies, or for an out-patient department, particularly if the floor could be put even with or above the grade line.

Solaria.

The value of sunlight in a hospital is conceded. Every ward should be constructed with a view of receiving the sun at some portion of the day, but in addition, some means should be appended to each ward whereby patients may receive the sunlight without stint and in comfort. The solaria should be constructed of iron or wood, as brick and stone require too much space. If it is proposed to put the sun-rooms at the front of the ward buildings, an ornamental iron structure, with removable sash, would be economical and efficient. A skeleton stairway could also be provided in this structure, thus furnishing the two stairways to each ward, which should be required in every building more than one story in height. The objection to heating wards by indirect radiation does not apply to the solaria, as the movement of air is assured by the varying temperatures produced by the sun, and they are occupied temporarily.

In details of construction volumes might profitably be written, but it cannot be entered into at length here. As an illustration, in the matter of floors alone errors are easily made. It has been the experience of the writer that tile may be used to excess. They are noisy and not altogether sanitary, for a poorly laid tile leaves many spaces where organic matter may collect. A narrow, well-seasoned white maple, well filled and shellacked (oil or varnish should never be used), and polished with wax, makes a beautiful, durable and reasonably non-absorbing surface. Preferably, rubber interlocking tile should be used in toilet and dining-rooms. The angle at floor and wall may be rounded, but a base-board should never be used. Preferably, the side wall should flush down to floor lining and the finished floor meet the wall with a quarter-round finish, which can be renewed from time to time. The same rounded finish can be given to ceiling angles, and, in fact, to all corners, but this is a refinement that is not a necessity. If the floor foundation is not fireproof, then a deadener of asbestos or slag is desirable. The curves previously mentioned apply with particular force to stairways. A curved stairway in a hospital is an abomination. In the present steel age, ceilings should be of steel, lined with asbestos, to prevent radiation. Walls in the ward buildings should be finished with Keene's cement or kindred substance, that would insure hardness and smoothness. It should then be made non-absorbent by a silicate filling. If proper ventilation is afforded, openings (windows and doors) should be made absolutely tight. Nurses soon learn that window ventilation is unnecessary where air is supplied otherwise in sufficient quantity.

Water supply and drainage are now so well understood that it is needless to treat them here. It may be well to mention that the noise likely to be caused by flush tanks, if toilet-rooms are near the ward, is an objection to be avoided.

SUMMARY.

The previous suggestions may be summarized as follows:

(1.) A design for a general hospital should favor segregation in its classification to an extent that will permit a separation of wards to give a light space on three sides of each, and avoid any space that is dark or poorly lighted from without; to be reasonably free from ornamentation, or from construction for display alone.

(2.) Curved lines should be used only when they serve a sanitary or practical purpose.

(3.) The cost of operating a plan in which the ward buildings are detached is no greater than in the block plan.

(4.) The method of heating and ventilation must be a part of the original design, and must be carefully projected or it will not be efficient. It should also provide for an equable temperature in all seasons, and particularly in the medical wards correct all faults of air supply with reference to humidity as well as temperature.

(5.) Dining-rooms, toilet-rooms and water closets should not be contiguous to the ward proper, and should have exits for air in excess of other outlets, in order to insure an air current to them and not from them.

(6.) An office or administration building should provide only for the executive and medical offices, and if used at all for residential purposes, should provide for the medical staff and officers only. It should not be a large and massive structure.

(7.) Separate accommodation for nurses is desirable, but is not necessary at the outset, if it is had in contemplation. No public appeal will receive a quicker response than this.

(8.) A central heating and power plant is a necessity, not only for economy, but efficiency, and should be provided for in a building detached from the main structure. In the same building may be located the laundry, refrigerating rooms (or, at least, the process), process for filtering or sterilizing.

(9.) Sun-rooms should be constructed to offer the least obstruction to light, and may contain a fire-proof stairway.

(10.) Finally, in the multiple details of construction, and in the equipment of a general hospital, the exercise of common sense and not fantasy should govern, and the sole object of every means and measure should be towards that for which the hospital is created.

1 MADISON AVE., NEW YORK.

For the ANNALS.

THE WARMING AND VENTILATION OF A GENERAL HOSPITAL.

BY FRED P. SMITH,

Consulting Engineer to I. G. PERRY, the State Architect of New York.

The well-constructed hospital, properly designed and thoroughly equipped with every known device for securing good service, cleanliness, light and convenience, is dependent for comfort, for successful treatment, for good sanitation, and, to a great extent, for economy in every-day operating expenses upon the skill shown in designing the methods of ventilation and warming.

This, of course, is almost axiomatic. No hospital managers, no architect in charge of design or erection, has started a general hospital during the last half-century without "*perfect heating and ventilation*" for a watchword. Almost as true as this fact is the statement that in no general hospital in this country can there be found a system of ventilation which is operative throughout the entire year, with a uniform supply and removal of air. Nearly all of the best hospitals of the United States employ methods in which the ventilation is merely an accessory of the warming, and is strongest in the coldest weather, when artificial ventilation is least needed; grows gradually weaker as the mild weather approaches, and in the sticky, humid atmosphere of a calm summer day leaves the patient at the mercy of the weather, while science stands by the bedside after a critical operation and trusts to the weather department for a life-saving breeze.

NEGLECTED POINTS.

That the modern hospital has received the most careful and intelligent treatment of the trained architect, the boards of physicians and of sanitary engineers, is true; that the treatment of heating and ventilation, power plants and lighting, in general hospitals, has not been equally intelligent is also true, as is easily demonstrable by the results obtained.

Assuming that the hospital is intended to offer to the patient under treatment every possible aid to the recovery of health which science can devise and money provide, the question arises as to whether there is to-day a general hospital in which the following conditions can be met by the apparatus and systems provided:

First: A means of preventing the temperature falling below a desired standard, say 70 degrees, in cold weather, or *rising above it* in warm weather. Is it not true that excessively high temperatures are much worse in many cases than low ones?

Second: A means of securing a *uniform* and controllable supply of fresh air in calm and humid weather as well as under dry and windy conditions. Is it not a fact that hospital ventilation fluctuates with the weather, being strongest in cold weather, when least needed, and weakest when most required?

Third: A means of securing a *constant flow* of pure air at controllable temperature the year round. Is it not the case that in nearly all hospital ventilation there is now a controllable and intermittent flow at a practically constant temperature? In other words, are there not registers or air-inlets to be closed when the room is too warm, or to be opened when the room is too cold?

Fourth: A means of securing, in the treatment of diseases of respiratory organs, or in surgical operations, a desired degree of humidity and of maintaining same, regardless of outside atmospheric condition. Does it not seem desirable to provide consumptive or asthmatic patients with the dry air in the hospital ward which otherwise they must travel westward to find? Is it not true that many critical surgical operations are rendered extra hazardous by a period of hot and muggy weather?

The writer is confident that these four points are seldom considered in the design of the ventilation of general hospitals, and if they are not, then the proposition stands that the ventilation of hospitals has not kept the pace of other advances in science.

RESPONSIBILITY FOR FAILURES.

Brevity requires plain speech, and the purpose of this paper is to bring out ideas. Therefore no apology is offered for direct statements, provided they are in keeping with the facts.

The Architect:

One of the principal obstacles in the way of good results is often interposed by the architect himself, even though his honest desire is for the best work. This is due to the mistaken idea that the engineer need not be consulted until the plans are practically completed. Then the engineer, unless his desire for good results is great enough to give him the courage of his convictions, is so hampered by the insufficient provision for flues and air passage made by the architect that he is forced to such makeshifts as "direct-indirect" radiation and similar schemes, when an earlier consultation, while the plans were still in pencil, would have given the desired results without extra cost, or the annoying changes in plans which an engineer always dislikes to suggest and the architect always dislikes to make.

The Engineer:

Another, and perhaps the chief cause for the prevailing bad practice in hospitals, is the failure of the engineer to consider ventilation except as combined with the heating system. Of course, in cold weather the two should go together, the one supplementing the other. But when spring arrives, and the heating ceases, the ventilation should continue even stronger than before, with the problems of cooling and drying the fresh air carefully studied.

The Wind:

A third oversight is the failure, almost always, to plan the systems with the fact in mind that a wind at thirty or forty miles an hour is very likely to be an element in the problem. Architects and engineers are quite apt to make their plans with the internal conditions only in mind, and then the wind is certain to change the results very materially.

The Windows:

Reliance upon windows for ventilation is frequently responsible for the failure to provide something else which is good.

The open window should never be counted on as a means of ventilation. In cold weather it causes draughts, in damp weather it does harm by admitting too much moisture, in calm weather it is ineffective, and in all weather it destroys the proper working of the regular system.

A most frequent error in this supposed benefit from windows is in the toilet-rooms and water sections, where the open window may simply result in blowing the odors from the toilets to the corridors, and where, in cold weather, they are not opened at all.

The Open Fireplace:

A condition of intermittent ventilation prevails wherever the open fireplace is used in connection with other means of warming, or, for that matter, where it is used at all for any other purpose than to give an air of brightness and cheerfulness to the sick-room. With the fireplace as the means of removing the vitiated air, we secure great results in cold weather, often excessive in fact, if the flues are of good size, but in mild weather the results grow less and in summer they cease, for then the fireplaces, if used, only add to a temperature already oppressive.

Indirect radiation is capable of furnishing fair results if intelligently introduced; but here again the simple truth is that, as generally employed, it is effective for ventilation only when required as a means of warming, and always takes a long summer vacation.

RADIATION.

Just here, because of the incorrect use of the term " radiation " to describe systems of heating in which radiation has no part, it may be well to define the several methods usually employed, namely, " direct," " direct-indirect " and " indirect " radiation.

By " *direct* " radiation is meant the placing of heated surfaces in each apartment to be warmed, but to which no fresh air is supplied. This method of warming has no place in a decent hospital system, because it provides a means of warming without ventilation, because it uses valuable space, and because it offers spaces for dust and germs which are inaccessible for cleaning. It is the almost universal experience in all hospitals that where there is a means of warming the building, without using the fresh-air supply, that means will be used by the engineer.

Direct-indirect radiation is a term applied to forms of radiators designed to stand in the apartment to be warmed, but for which a small amount of air is supplied from outside. This form of radiator is a delusion and a snare for the unwary, for there is just enough of a semblance of fresh-air supply connected with it to enable an ignorant or scheming architect or engineer to satisfy an inexperienced board of managers that the subject of ventilation has been studied and properly treated.

" *Direct-indirect* " is the device of the lazy or incompetent engineer, who offers a small hole through the wall, with a radiator in front of it, as a substitute for ventilation. None of the niceties of control of temperature are readily feasible if a constant flow of air is to be secured. Every objection to direct radiation applies to this method, while as a means of practical ventilation it amounts to nothing except when a room needs heating.

Indirect radiation is a broad term covering all methods of warming a room with heated air, and means the placing of heated surfaces within air-ducts or chambers, from which the warmed air flows to the apartments.

In Massachusetts schools this method is so introduced that excellent results are secured without the use of fans, but the large flues, the great air-conduits, the air-mixing devices, and, in fact, nearly all the elements essential to the success of this system, are never found in the general hospitals so far erected. Nor does this system offer any means of air-supply or ventilation when a room requires no heat.

WHAT SHOULD BE.

The plant for the hospital should include steam power for all purposes of heating, lighting, cooking and the refrigerating plant. The boiler-room should be so located that dust from coal or ashes and soot, or smoke from the chimney, could in no way be drawn in with the fresh air for ventilation.

The lighting should be by electricity, for safety and cheapness, and the hospital should install its own electric generating plant, since by so doing the heating of the building may be done almost entirely by exhaust steam, without cost for fuel.

System of Ventilation:

The system of ventilation should be entirely mechanical, with fans operated by electric motors, and should be modified for each section of the hospital to suit the needs thereof. It is absurd to treat the entire hospital with a system of ventilation which is alike in all departments, and it is almost criminal to merely warm any department by direct radiation without providing ventilation as well.

Refrigeration:

Refrigeration should be done without ice, by the mechanical process. Utilization of the exhaust steam for kitchen purposes, water heating, sterilization, laundry drying, and numerous other purposes renders the operation of the plant inexpensive, while the daily calls of the iceman with attendant dirt is avoided. Pure water may be secured by using the exhaust steam from the refrigerating machinery to distill the ordinary city water.

Heating:

Heating should be by exhaust steam from the plants for lighting and other power, with means of adding live steam when sufficient exhaust steam is not being furnished. Modern methods distribute the exhaust steam to any desired distances without the slightest back-pressure upon the engines.

THE IDEAL SYSTEM.

To bring clearly before the mind the points to be included, the following schedule is presented as a basis for the guaranteed results an engineer should be required to secure.

(*a.*) To warm the whole building, at the same time, as may be needed in cold weather, with a constant volume of warmed air, supplied at a controllable temperature, and to cool the whole building, at the same time, as may be desired in warm weather.

(*b.*) To ventilate all wards and hospital rooms to such an extent that each occupant therein shall be supplied with not less than sixty cubic feet of pure air, per minute, without causing objectionable currents.

(*c.*) To ventilate all toilet-rooms so that no air may escape therefrom to the corridors or connecting rooms, and so that no odors may be discovered within them.

(*d.*) To ventilate the kitchens and cooking apparatus in such a manner that no odors therefrom can escape to the rooms of the building.

(*e.*) To so dry or moisten the fresh air as may be necessary that any apartment may be maintained at any desired degree of humidity.

(*f.*) To so warm any given room that the temperature therein shall vary not more than two degrees at the same elevation, and not more than five degrees between the floor and the ceiling. This point is very important in ward-rooms, and absolutely essential in the clinic lecture-rooms, where the audience is at such different levels.

CONSTANT VENTILATION.

It is upon this point that most hospital systems fail. It has already been pointed out that "natural" or gravity systems of indirect heating, or heating by warmed air, has all the fickleness of nature herself.

But even when fans are used to force the flow of heated air it is still true in the majority of cases that the flow of pure air is interrupted by closing registers whenever the desired temperature is reached.

In the State hospitals for the insane of New York the State

Architect, Hon. I. G. Perry, has done much to advance the standard of good work, in this respect, by so arranging the systems of ventilation that in no way can the constant flow of fresh air, either warm or cool as required, be prevented. But except in these buildings it will be difficult to find hospitals so treated. The writer is aware that this statement is likely to be challenged by those who have systems where the air may flow in, either *all hot* or *all cold*, conditions which meet the *extremes* of outside temperature, but which do not care at all for the intermediate range.

In order then to meet this first essential the system of ventilation must be so arranged that the current of fresh air, on its way to a room, may be divided at the heater so that part may pass through and be warmed, while part may pass by unheated, and then the two currents again be united and mixed in such proportion as will give the desired temperature.

This is usually best accomplished by the " double-duct " system, now rapidly displacing all others where the law, or the architect and managers, demand a high standard of results. In this system one duct conveys warm air and the other cool air to each flue, and here is placed a mixing valve, which controls the flow of air from either or both ducts as desired. With the use of the double ducts has come the necessity for double fans as well, so that there are really two duplicate single-duct systems side by side, in one of which the air is heated more than in the other. Thus rooms on the sunny side of the building receive air from the cooler supply, while those in the shade receive it from the warmer.

It should be borne in mind that in all buildings there are always certain rooms easily warmed, while others require more heat. The rooms to the east are in the sunshine, while those to the west are in the shade. Or some are exposed to cold winds, while others are in protected sections. Some rooms have a large number of occupants and large volumes of air are required, while others, having but a small number, but being perhaps much exposed, require smaller volumes of fresh air, but at a higher temperature.

SPECIAL TREATMENT.

The next important feature to be observed is the special treatment to be given each section of the hospital to meet the special need thereof. The treatment of the dispensary department, for instance, when there is a moving throng of persons for a comparatively short time each day, should not be the same as that of a ward, where all the patients are in bed, and the room is used day and night.

The isolated wards should not be given the same systems as that for non-contagious diseases, nor should the sleeping rooms of attendants and servants be given the same treatment as the private rooms of pay-patients.

The amphitheatre and operating-rooms need a system quite different from that of the officers and administration section.

It follows therefore that the special needs of each section must be carefully studied. Provision must be made in certain portions for summer cooling, as well as winter heating, and especial care must be made to prevent excessive humidity in all sick wards and surgical operating-rooms.

Take the case of a consumptive pay-patient, and it is probably true that pure dry air would be the greatest boon the hospital could offer, while in all the wards the ability to secure a temperature below 72 degrees on a hot summer day would be a blessing to patients and physicians.

WINDOWS.

There is a great field for improvement in the windows of hospitals which architects would do well to study. There should be no transoms, as is the frequent practice, but rather there should be *double sash.* This is to prevent any possibility of draught in winter, and to prevent rapid overheating in summer. The outer sash should be of the usual sort to slide up and down, and the inner sash should be of the casement style, hinged at sides and to open inward. This arrangement offers facilities for cleaning or for opening when desired in fine weather. Inside shutters should never be used, and outside shutters, or else awnings, which are better, should never be dispensed with during the summer.

AUTOMATIC REGULATION.

It is very desirable that the temperature should be automatically controlled by means of the thermostatic devices now so successfully employed. Aside from the great benefits to be derived from an unvarying temperature which this system secures, there is an economy in operating expenses which is gratifying.

COOLING AND DRYING.

With a refrigerating plant installed, as is very desirable, the method of cooling the fresh air to any desired temperature is about the same as the warming system, using the divided air current and a mixing valve as previously described. The drying is effected by cooling the inflowing air so that its moisture will be deposited on the surfaces of the cooling coils. Of course it is often necessary to warm the fresh air after it has been cooled in the dryer, before it can be admitted to the rooms.

The toilet-rooms, kitchen, scullery and other sources of objectionable odors all demand a skill in treatment which is seldom given in any general hospital in a manner to be effective.

Simplicity of apparatus, so that its operation becomes easy, is a distinguishing feature of the best systems. Progress in ventilation is in the line of simpler devices, and the special features on which this paper has placed emphasis do not in any way tend to a complication of apparatus.

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For the ANNALS.

THE PLUMBING, WATER SUPPLY AND DRAINAGE OF HOSPITALS.

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The subject assigned to me for discussion is of such magnitude as to render it impossible to deal with the same exhaustively in the short limits of a single article. Nevertheless I shall try to point out, be it ever so briefly, the matters which are of most importance.

I shall assume, by way of introduction, that both the architect and the building committee of a hospital have recognized the fact that the crowding together of a very large number of disabled and diseased persons in a confined area requires the most complete and carefully considered sanitary arrangements. The application of modern sanitary principles and the installation of approved sanitary appliances, which are necessary even in the case of ordinary dwellings wherein only a few healthy persons are sheltered, become of paramount importance in the case of sick and helpless patients.

Hence the first axiom in hospital construction should be that the buildings should under no circumstances be monumental or palatial structures. The outer appearance of the buildings should be characterized by severe simplicity. No money should be appropriated or spent for purely architectural display, for ornamentation or for outside show. On the other hand, everything should be done to make the buildings safe and healthful, and it should be the constant aim to secure the best hygienic construction and the latest approved sanitary appliances.

I also wish to point out and lay stress upon the necessity of engaging the services of a hydraulic and sanitary engineer at an early stage of the work, for even in the selection of the site for a hospital questions of drainage and water supply may and will arise, which can be decided in the best manner by the thorough knowledge and practical experience of a specialist.

Practically, it makes no difference whether the hospital building is intended for a general hospital, or is to be one of the various special hospitals, such as a fever hospital and hospital for infectious diseases, or a lying-in hospital, a surgical hospital, a military hospital, a children's hospital, or a hospital for insane patients. The general principles and arrangements remain about the same, though each may in addition have some special requirements.

The two great general sanitary requirements for hospitals, whether small cottage or village hospitals, or large city hospitals many stories, are:

1. Plenty of light and of fresh air, particularly for the wards, for the toilet-rooms, the pantries and closets.

2. Absolute cleanliness, inside as well as outside of the buildings.

It will be well to bear both requirements constantly in mind in the following discussion. Both conditions are secured by a perfect system of water supply, sewerage, plumbing and ventilation. The last-named branch of sanitation will be excluded from the discussion in this paper.*

DRAINAGE AND SEWERAGE.

In determining the site for the building the drainage and sewerage must at once be taken into consideration. Where the hospital is to be located within the city limits the problem generally is a simple one and presents few, if any, difficulties, for as a rule a city sewer will be available for connection at not too great a distance. But if the building is to be located in the outskirts of a town, or in the country, it will be necessary to determine at once upon a general sewerage scheme, and the first matter to be settled is the position of the main sewer outfall, for upon this will depend the layout and the grades of the sewer laterals and branches, and the arrangement and course of the house sewers.

Another point of importance, which requires early consideration, is the question whether the sewerage shall be arranged on the separate or on the combined system. In the first system the rain-water from roofs, yards and roadways is excluded from the hospital sewers. In the combined system storm-water as well as foul sewage are received in the same sewer channels. As a rule it is much better to deal with the rainfall separately. The rain-water can often be stored in cisterns, and utilized in the laundry or in the boiler-room, and this might with advantage be done much more often than is actually the case. Again, it should be borne in mind that the sewage from a hospital often has to be purified or dealt with in a special manner before it can be discharged into a watercourse, and in all such cases the admission of a portion or all of the rainfall increases the volume of sewage to be treated — which, moreover, sometimes has to be pumped — and hence renders any method of sewage purification more expensive and difficult in management. Another consideration bearing upon economy in construction refers to the size of the main sewer and of the lateral branches. Where the rainfall is admitted to the sewers the sizes must be calculated in proportion to the maximum amount of rainfall to be removed. On the other hand, where rainfall is excluded or dealt with separately, the sizes of sewers will be much reduced, and a more uniform and constant flow secured, which in turn will make the sewers more self-cleansing.

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* It is treated elsewhere in this issue of the Annals.

In the majority of instances it is undoubtedly better to arrange the sewerage of an isolated hospital according to the separate system.

In designing a sewer system for a hospital the following chief requirements must be fulfilled: All sewers should be self-cleansing, free from deposits and absolutely water-tight. Ample ventilation should be provided to the main sewer as well as to the laterals, and provision made for keeping the sewer lines accessible for inspection and cleaning.

The alignment should be as straight as possible, and where changes in direction are required they should be made with easy curves in manholes. All junctions should be made with acute angled branches and never at right angles. Sewers should be laid at the proper depth and on true grades, and the fall should be as uniform as possible. Manholes and lampholes for inspection should be placed at suitable intervals on all mains and laterals. Provision for daily automatic or periodic hand flushing should be made at the head of all laterals. Sewers should be well ventilated, which is generally accomplished by the use of ventilating covers on the manholes.

Hospital sewers are rarely required of such dimensions as to necessitate the construction of brick sewers. As a rule they consist of pipe sewers, proportioned in size to the maximum volume of sewage which they may be called upon to carry. The best available material for small sewers is vitrified sewer pipe, which is more smooth and impervious than cement pipe. Iron sewer pipes are used near buildings, also where sewers necessarily cross under the basement of buildings, and where the sewers must be laid in made ground.

The joints of vitrified pipe sewers should be made tight by means of Portland cement, care being taken in making the joints that no cement protrudes on the inside of joints, where in hardening it would form a serious obstruction to the free and uninterrupted flow of sewage. The pipes require to be laid on a firm bearing to prevent subsequent breakage, and in yielding ground it is desirable to lay them on board or concrete foundations. All drains for sewage should be tested when laid, first as to their tightness, by a water-pressure test, and second as to their inside smoothness and ability to remove sewage matters, which is ascertained by passing a wooden ball through the pipes from manhole to manhole.

Manholes should be located at distances of about 200 or 300 feet, and at every hundred feet there should be lampholes to facilitate the inspection of the pipes from the manholes. The bottom of sewer manholes should be formed as a semi-circular channel molded in cement, and the sides of the bottom should have a steep inclination to prevent sewage matters from becoming stranded.

Where the separate system of sewage is adopted the storm-water falling on roofs and yards may be taken care of in one of three ways, *i. e.*, it is either collected and removed by separate rainwater drains and discharged into a nearby water-course, or else it is gathered in rain-water cisterns, usually built underground, or finally it may be allowed to run off on the surface and into road ditches.

Where the ground upon which the hospital buildings are located is damp, wet or full of springs, drainage of the soil is advisable. This is accomplished by special lines of agricultural or land drains, consisting of porous, unglazed earthen round pipes, laid with open joints in deep trenches. The sewers for foul water should never be made to fulfil the double duty of removing the sewage and draining the land. The subsoil water gathered in land drains may be suitably disposed of by discharge into an open watercourse. Similar tile drains may be necessary along the footing courses of the foundation walls.

SEWAGE DISPOSAL.

Where the hospital sewers connect with a city sewer system the disposal of the sewage need not be further considered, except that cases may arise where it will be advisable to arrange for utilizing a part or the whole of the sewage on hospital land for farm irrigation purposes during certain portions of the year. On the other hand, where there is no regular sewerage system the problem of sewage disposal will confront the hospital authorities. The simple crude discharge of sewage into a watercourse cannot be approved, except where the buildings are located near a large stream, when immediate dilution and a rapid current would render the sewage innocuous. Should the watercourse be one which supplies drinking water to cities or towns located below the hospital, the discharge of sewage into it is generally prohibited by law or by the State Board of Health. Where it is nevertheless attempted, it will generally lead to serious trouble or litigation arising from the pollution of the stream.

It is therefore best to prepare from the start some plan whereby the sewage can be purified. All plans for the simple straining of sewage, or for subsidence in sewage tanks or large cesspools should be discountenanced, for in both cases only the coarser, suspended impurities are held back, leaving the sewage of much too foul a character to be discharged into any stream.

As a rule it will be best, where sufficient hospital land at suitable elevation can be obtained, to apply the sewage to the soil, and to effect its purification by irrigation on, or by filtration through, land. Very satisfactory results may also be attained by intermittent filtration through artificially prepared sand and gravel filter-beds.

In some cases it will be necessary to use pumps to lift the sewage on to land suitable for sewage farming. The purification of sewage is accomplished either by broad irrigation or by subsurface disposal, or by intermittent downward filtration, the choice of the system depending upon the available area of land and the proximity of same to the hospital buildings.

In all cases the land selected for sewage disposal should be either naturally porous or artificially underdrained. The sewage farm should also be as remote as possible from the source of water supply, if this is a local one. It is generally advisable to intercept all solid matters, papers, rags, etc., either by a straining chamber or by an intercepting tank, both of which will need almost daily attention and cleaning. This is particularly necessary in the case of sub-surface irrigation, for otherwise the small absorption tiles through which the sewage is distributed will soon clog up and cause the sewage to break up on the surface. Intermittent application of sewage to the soil is essential, otherwise the ground may become saturated and swampy.

Whatever the system of sewage disposal selected, its distribution on the land and the management of the sewage strainer and flush-tank require *intelligent* attention, for without it the result is almost sure to be a failure, which, owing to the non-acquaintance with the essential requirements of the system, is only too apt to be attributed to faults in the system of disposal.

There are cases where the area of land available for sewage disposal is rather small. It may then be advisable to combine a system of chemical precipitation with subsequent sewage utilization on land. Where no land at all is available, or where suitable land is held by the owners at too high a price, it may be necessary to purify the sewage either by a chemical process or by a process of aeration, or by an electrical purifying process, but these will be generally found more expensive in first cost and in maintenance, and more difficult in management than a system of disposal by application on land.

A crude method, which is unfortunately too often resorted to, where no sewer and no large water-course are available for discharge of the hospital sewage, is to lead the sewage to large cesspools, constructed with loose sides and open bottom, from which the sewage is permitted to escape into the lower strata of the soil. This method of disposal cannot be approved from a sanitary point of view, as it involves long storage of putrescible matter, and leads to a pollution and defilement of the soil, and also quite often to the contamination of springs or wells. A leaching cesspool is a sanitary abomination, and it cannot for a moment be considered even as an attempt of solving the difficult question of the disposal of sewage.

Privy-vaults should never be used for hospitals. Where outdoor conveniences are required, earth closets should be erected. If not located too near to the buildings, these will be found unobjectionable and easily managed, and the enriched dry earth forms a valuable manure for use on the hospital farm. It must, however, be remembered that such earth closets require daily attention, and emptying and cleaning at frequent intervals.

WATER SUPPLY.

Water supply and sewage are closely allied together. No hospital having a general system of water supply should be without a sewerage system, and, on the other hand, every hospital provided with sewerage facilities requires an abundant water supply to secure the flushing out of the plumbing fixtures, waste pipes and sewers. Where only one of the systems is provided serious trouble is sure to result.

An abundant supply of good and pure water is a prime necessity. More water is required for hospital buildings than for other institutions, in order to insure that fastidious cleanliness characterized as one of the chief requirements of such a building. Not only must provision be made for all water required for personal cleanliness, for bathing, scrubbing, and for use in the large laundry and in the boiler-house, but a large surplus of water is required for fire protection purposes.

In the case of city hospitals a public supply is generally available, and arrangements can usually be made for a large supply main, not less than six inches in diameter, for the institution. Unless the city is supplied from a private water company, water is generally delivered to hospitals the same as to other charitable institutions, free of charge. This secures an unstinted use of this important element throughout the hospital. Isolated hospitals located away from the densely populated centers of cities, as also village hospitals and hospitals for insane, usually have to provide a private and independent water system. In arranging and designing such a system of water supply the following are points of importance:

First, concerning the quantity to be provided; this should be very large and ample. Fifty gallons per head per day should be regarded as the minimum supply. In many hospitals a much larger quantity is consumed per day, and in some of the State hospitals the average daily quantity exceeds 200 gallons per day, which is partly explained by the lavish use of water for bathing the patients, and partly by the use of automatic flushing arrangements for the water-closets and urinals in the patients' wards. Where water is pumped it is desirable that the supply be controlled and the waste checked as far as possible to reduce the annual expense for fuel for pumping, a matter to which far too little attention is generally paid.

The quality of the water supplied to a hospital should be pure, suitable for all purposes, and above the slightest suspicion of contamination. Before determining upon a source of supply, which appears to be favorable in all other respects, it is necessary to make a thorough examination of the water. This involves a chemical quantitive analysis, to determine vegetable and animal impurities; a microscopical examination, a biological analysis, to determine the number of bacteria in the water and the presence or absence of any disease germs, and finally, a sanitary inspection of the source of supply and its surroundings. In the case of springs and wells the inspection may be confined to the immediate surroundings of the same, but in the case of surface waters impounded by storage dams the entire watershed should be visited, and all sources of soil or water pollution carefully studied, to ascertain if they can be eliminated. Where water is to be drawn from rivers or flowing water-courses, both banks of the stream should be examined for quite a distance above the point of the proposed intake of water for possible sources of pollution, such as sewers, drains, industrial wastes, etc. As soon as a source of supply is determined upon the most stringent measures should be taken to avoid entirely all subsequent pollution.

It is likewise important that the water should be delivered to the building under a good pressure, not only because this insures a better supply and a constant head on the upper floors, but also on account of the requirements of fire protection to the hospital. The pressure should be ample to give a good fire stream in the attic of the buildings. If such pressure cannot be secured otherwise, it is necessary to provide storage tanks at high elevations, generally in tank towers forming part of the building, or else by outside elevated tanks, to which the water must be pumped.

The source of water supply may be a spring issuing from the rocks, either at an elevation much higher than the hospital, or perhaps located in a hollow, in which case a pumping station must be erected. It is important to ascertain by gaugings the yield of springs during a long-continued period of drought, as many springs are liable at such times to fail. A single well, or a series of wells, may constitute the supply, and the wells may be either shallow or surface wells, or deep wells, or flowing (so-called artesian) wells. It may be said that shallow wells are generally undesirable, as being too liable to pollution from surface drainage, or by soakage from privies or cesspools. Deep wells, while safer from pollution, may not yield water fit for all uses, and generally the water is too highly charged with mineral salts. Heavy continued pumping from deep wells often causes their subsequent pollution by the lowering of the water level and the gradual drawing upon the underground sheets of water at further distances. Again, water may be drawn from a lake, pond or sheet of water fed either from surface water or more often from subterranean springs. Sometimes water is pumped to a hospital from a river or creek, or else an artificial storage reservoir is formed in a drainage district by throwing a dam across the lower end of a valley, thereby collecting or "impounding" the water from the drainage area or watershed. This latter must be free from all pollution from sewage or field manure, and the bottom should be thoroughly cleaned from all dead vegetation. Finally, water suitable for many purposes can be obtained, where other sources are unavailable, by collecting the rainwater falling upon the roofs of the buildings in underground tanks or rainwater cisterns. As a rule, however, the quantity so gathered would fall far short of the demands of a hospital.

Whatever the source selected may be, an intimate knowledge of hydraulic engineering is required to avoid a mistake in the choice. Each source of supply should be judged as to its character by making the examinations and analyses aforementioned. Special points to be looked into are the hardness of the water, which determines its availability for the steam boilers and in the laundry, and also the possible action of some waters on metals like lead or iron, for this may have a bearing upon the material chosen for the service pipes and for the water-tanks.

Regarding the manner in which water is supplied to a hospital, we may distinguish between a gravity supply and a supply by pumping. The former is, of course, much to be preferred on account of economy in management, provided the pressure is ample to insure fire protection.

Where pumping is required we have three systems, which I name in the order of their relative superiority, viz., pumping to an elevated reservoir, into a standpipe, or directly into the water mains. The topography of the hospital grounds generally determines the question whether a reservoir or a standpipe are preferable. Where sufficiently elevated land cannot be found upon which to build a reservoir, a standpipe is much to be preferred. It is also more economical in first cost than a reservoir, particularly if the latter is to be a covered reservoir, which has some advantages over open reservoirs. Pumping directly into the mains cannot be considered as good as either of the other systems, and it has the great drawback of providing no surplus storage of water available in case of fire.

The water supply for a hospital must frequently be purified on a large scale before it is suitable for use. This may be done either in large filter basins or else by mechanical filter plants. Of all methods of filtering water on a large scale, sand filtration as practiced in many European water-works is undoubtedly the best, though it is slow in action and expensive in operation. Tolerably good results may be achieved by using pressure or mechanical filter plants, which filter the water largely by straining, and often secure a perfectly bright and clear effluent by the addition of alum, causing a chemical precipitation and purification. If alum is used, however, care should be exercised not to use too large a proportion of the same, which would result in free alum appearing in the filtered water, and possibly rendering the same injurious to health, or at least making the same unfit for use in the laundry, by reason of the rusting of water mains, or unfit for use in the steam boilers, owing to the danger of the formation of boiler incrustations. All filtration plants should be arranged with a view of easy cleaning of the filter-bed, otherwise the filters soon become worthless.

The drinking water of a hospital should be filtered by means of one of the different household filters in candle form, consisting of porcelain or infusorial earth, such as the Chamberland-Pasteur filter, or the Berkefeld filter, which latter, according to recent investigations, is not quite so slow in action as the former, and bids fair to take front rank among germ-proof drinking water filters. The filtering material used in both filters named should be cleansed daily by brushing, and sterilized from time to time to attain good results and to maintain a germ-proof condition of the filter. Unless this is done with regularity, boiling of impure water is better than any system of household filtration.

If rain water is stored and collected in cisterns, these are usually built underground outside of the building. They must be built perfectly water-tight, and all danger of contamination of the cistern-water should be avoided. The overflow of a cistern should never be connected with a sewer or drain for foul water, but may be connected with the land drains, or else a special pipe should be carried and discharge on the surface or into some ditch or road gutter. The outlet should have a strainer to protect the pipe from mice and other animals. The cistern should be covered, yet well ventilated. It must be easy of access and frequently cleaned out. If possible, reversible rain-water connections should be used, to throw away the first washings from roofs, which are apt to be impure, or else a small filtering device can readily be attached to a cistern to intercept leaves, soot and other dirt from the roofs.

Except in cases where a high pressure of water is carried in the mains, hospital buildings require large water tanks. They are placed either on steel or iron tower structures, or else in the highest part of the building itself.

House service tanks should likewise be constructed with a view of preventing any pollution of the water. They should be built of boiler iron, or of slate or wood, either rectangular or circular in shape. Smaller tanks are built of wood lined with tinned copper. Lead tank linings are objectionable on account of the danger of lead poisoning, and galvanized iron water-tanks are unsafe for similar reasons. House tanks should be provided with covers to exclude dirt and dust; they should have ventilation to the outer air, and means for frequent emptying and cleaning, and the covers should be arranged with hinged trap-doors to give access to the tank for inspection. They must be so located as to prevent all possibility of water contamination by gases from soil pipes or odors from plumbing fixtures; the tanks and pipes should also be protected against frost. The overflow pipes from house tanks should discharge into the roof gutter, or else deliver over a trapped and water-supplied sink in the basement. Never should an overflow from a water-tank be connected with a soil pipe or sewer.

From the stand-pipe or the pressure reservoir the water is conducted to the hospital buildings through lines of distribution pipes, which are laid in the ground at such a depth that all possibility of freezing is excluded. Mains generally consist of cast-iron pipes, of suitable thickness, laid with well-caulked joints, and with the necessary fittings or " specials," and provided with gate valves to control the flow of water through mains and laterals, also with branches to outside fire hydrants. Water mains should be of ample diameter to secure a full supply to the buildings, and for fire protection they should not be smaller than four, or better six, inches in diameter. In order to prevent stagnation of water in the mains, and to insure a supply in case of the bursting of a water pipe, it is preferable to arrange the distribution system on the " circulating plan," wherein all dead pipe ends are avoided.

The service pipes in the hospital may be either lead or iron pipes, the latter generally made galvanized to prevent rust. Certain waters have a detrimental action upon galvanized pipes, but as a rule such pipes can safely be used. They are conveniently put up and run, and for hospitals for insane they are preferable to lead pipes, as not being so liable to be injured by blows or other malicious interference.

Where water is pumped, the pumping plant should be designed with skill and due regard to economy in management. Pumps should always be provided in duplicate to guard against a water famine, which in a hospital would be very disastrous, in case of a breakdown of the machinery. Unless the gravity supply insures a strong fire pressure, it is desirable to provide and fit up in the pump-house a special fire pump, which may be either a rotary pump or else a direct-acting steam pump. Where electric currents are available for power purposes, the pumps are often run by electricity instead of steam.

PLUMBING IN GENERAL.

Having now discussed the general topics of outside water supply, the sewerage of a hospital and the disposal of the sewage, and determined how pure water can best be supplied for use, and how the same water, after use, may be promptly removed, together with all its organic impurities and dejecta from the person, and how it can be made innocuous before discharge into a stream, I will next consider the inside plumbing apparatus and plumbing pipe system adapted for hospitals.

Plumbing and house drainage, as applied to hospitals, are governed by the same general rules and requirements enforced in other kinds of buildings, and it is therefore necessary only to describe briefly the chief general features. A certain number of points of more special application will be noticed afterwards.

In general, I may say that the arrangement of the plumbing should be as simple and direct as practicable. Where the buildings are two stories or more in height the aim of the architect in designing the floor plans should be to locate the plumbing in vertical groups, in order to reduce the number of pipe lines to a minimum. Horizontal branches should likewise be avoided as much as possible on account of the difficulty of giving a sufficient fall to the waste pipes.

The plumbing for hospital wards is best located in an annex pavilion, cut off from the ward by a well-ventilated lobby or short corridor. Rooms containing plumbing should never be entered directly from the wards, and this is of paramount importance in the case of surgical wards. The foregoing remarks need not apply to the plumbing of the administration building or of the kitchen, pantry and laundry.

The plumbing system, which often, for convenience's sake, may be subdivided into several divisions, will consist of vertical lines of soil and waste pipes. In the basement or the cellar, as the case may be, all these lines will be gathered and connected into lateral drains, which again join to form main drain lines, or house sewers, as they are more appropriately called. Wherever practicable drains should be kept above the cellar floor and supported by brick piers, or hung from beams by pipe hangers or clamps. The hospital building may have one or several lines of house sewers, according to the size and extent of the same. It is desirable to restrict the size of the largest house sewer within the building to six inches in diameter. Each line of house sewer should have a running or main trap, and each trap should have a fresh-air inlet on the house side of said trap, extended to a point outdoors well remote from windows and from fresh-air ducts of the heating apparatus. It is best to extend the fresh-air pipe two feet above grade, and to finish the same with a quarter-bend covered, as a protection against obstructions, with a brass air inlet grating. For city hospitals it may be difficult to find a suitable place for the air inlet, but I warn against locating the same in a brick box, with iron grating set flush in the sidewalk near the curb, as the gratings invariably become obstructed with mud and dirt, and in winter with snow and ice. The main traps of all house sewers should have clean-outs, and should be kept accessible by manholes built around the same. Where a hospital is composed of a group of buildings, I hold it is preferable, in order to isolate one building from the other, to place a running trap on the line of house sewer for each of the buildings.

All soil and waste lines should be carried vertically upward, and extended at least the full size through the roof for ventilation, all pipes smaller than four inches being increased to this size at the roof, to prevent their becoming closed up in winter time by hoarfrost.

Soil, waste or vent pipes should never be run to and terminate in brick flues, as the bricks are porous, and liable to absorb sewer air and to retain disease germs.

Where deviations from the vertical line must necessarily be made, the offsets should always be made under an angle of at least 45° from the horizontal line in order to prevent any rust from lodging in the pipe, and thus obstructing the free vent outlet at the roof.

All plumbing in a hospital building should be separately trapped, and the traps should be set close to the fixtures. Traps should be arranged in such a way that they can by no possibility loose their water seal either from self-siphonage or from suction caused by discharge of other fixtures on the same line, or by evaporation or by back-pressure. One method of accomplishing this end is to run vertical lines of air or vent pipes, and to attach branches from them to the highest point of each and every trap. Practically this prevents siphonage in nearly all cases, but a great complication of the system and the possibility of dangerous by-passes are thereby created. The same object can, without doubt, be attained by simpler means, consisting in using traps with deep water seal for water-closets, and so-called non-siphoning water seal (not mechanical) traps under other fixtures, where the same are located within four or five feet from a well-ventilated line of soil or waste pipe. Long branch wastes must in all cases be extended separately up to the roof, but the traps under the branches do not need the "back-air pipe." I call the improved method the "one-pipe system" to distinguish it from the prevalent two-pipe system, which is in my judgment unnecessarily complicated and correspondingly expensive.

The new method, if judiciously applied, will render a plumbing system fully as safe as the old-fashioned and cumbersome method.

Going a step further, we may apply this rule of utmost possible simplicity to all parts of the plumbing work. Another axiom to be borne in mind is to make all parts of the plumbing system accessible for inspection and repairs. Mechanical appliances liable to get out of order should be avoided. Mechanical traps in particular cannot be approved except where there is only clean water flowing through the waste pipes. Water-closets with mechanical appliances are an abomination and should never be tolerated.

A further modern maxim, of particular importance in the case of hospital buildings, is to avoid all woodwork around plumbing fixtures, to abolish pipe casings and wooden enclosures to fixtures. All plumbing in a hospital should be *exposed plumbing*. Every line of pipe, whether soil, waste, vent or supply line, should stand free from the walls. I cannot lay sufficient stress upon the importance of this method of construction. Water-service pipes should not be put in walls or between floors, because if so placed hidden leakages of water will cause more damage to decorated walls and ceilings, and also because pipes in walls, if these are outside walls, are very liable to freeze in cold weather, and to cause damage by bursting. I likewise urge doing away entirely with all wall recesses or pipe casings for soil or vent pipes, because in case of the joints leaking water or sewer air, it is difficult or impossible to reach the pipes to detect the leak. I also disapprove of pipe casings in front of wall recesses, because the enclosed spaces constitute very undesirable runways for mice, rats and roaches, and form breeding-places for vermin. Whoever has seen the untidy, nay, sometimes filthy, condition of the interior of such pipe casings, and compared same with a good example of modern exposed work, will never want to return to the old-fashioned methods of doing plumbing work. Another objection to the pipe recesses is that they act as convenient channels or flues for carrying foul odors from the cellar or lower floors of a building to the upper floors.

There is absolutely no good reason why plumbing pipes should not be kept in sight in toilet-rooms, and in pantries and through closets. Open pipes can always be examined and tested, and, if required, tightened in the joints or repaired in case of breaks. Where they pass through floors and ceilings the openings can be efficiently closed with plaster, and thus no inviting corners or spaces are left for waterbugs and vermin. It should also be noted that where plumbing work remains exposed to the light the mechanic will exercise greater care in doing his work; therefore the general quality of the work will be improved. Fortunately, the prejudice of architects and owners against open plumbing work has been overcome, and a new era in house sanitation has therewith begun.

I must not omit mentioning that where this can be avoided no plumbing pipes connected to the sewer system should pass through the wards or through the operating rooms of a hospital.

With open plumbing work perfect cleanliness can be much more readily maintained, and it is likewise possible to exert more vigilance in regard to the plumbing fixtures and their condition.

Elaborate display and efforts to make the plumbing work ornamental, possibly at the expense of simplicity and substantial workmanship are evidently out of place in the ward plumbing rooms of hospitals. The same is true of nickel-plated brass piping. It is a mistake to suppose that exposed open plumbing cannot be installed without the use of nickel-plated brass pipe.

Lead and iron pipes, and even brass pipes and fittings left rough outside, can be made to look well by bronzing with aluminum bronze or by enamel painting.

SOME PLUMBING DETAILS.

Before discussing hospital plumbing fixtures I must consider some further details of plumbing work, such as the material, sizes and arrangement of pipes, and I shall try to give this information in as condensed form as possible.

No earthen pipes should be used anywhere within the walls of a hospital. From a point about ten feet outside the foundation walls the house sewers should consist of extra heavy cast-iron pipes. Wherever pipes are carried above the cellar floor heavy wrought-iron pipes may be used. The soil, waste and vent pipes may be either extra heavy cast-iron or else heavy wrought-iron pipes. The former pipes are jointed with lead-caulked joints, whereas wrought-iron pipes are put together with screw joints. Screw joints are superior to caulked joints, and more durable and permanently tight. For joints in cast-iron pipes a new material has been put forth recently, consisting of a mixture of steel and iron filings made into a paste, which hardens quickly and becomes very tight. This material, called "Smooth on Joints," is the invention of a practical chemist, who has made exhaustive tests of same before putting it on the market. I have had the same applied to several lines of cast-iron pipe, and found it to be quite tight under the water-pressure test. So far, however, there is not sufficient experience regarding its permanency and durability. If it should prove to remain tight it would certainly be a great improvement over the ordinary caulked joint, and not the least advantage of the new material would be that it does away with the necessity of a plumber's furnace for melting the lead, and thus would greatly reduce the fire risk in non-fireproof buildings during construction.

Wrought-iron soil pipe systems should consist of pipes made rustless, either by galvanizing or by asphalting. Plain so-called black iron pipes should never be used for house drainage purposes. For vent lines it is better to use galvanized pipe, as these are less liable to rust than asphalted pipe, but for soil pipes I prefer the latter on account of greater smoothness.

The fittings for wrought-iron pipes should not be the ordinary steam fittings, but should be the recessed or drainage fittings, first introduced years ago by the Durham House Drainage Company.

Soil pipes should be four or five inches in diameter, the former size being sufficient for fixtures in the administration building and also for the wards, except where there is a very large number of fixtures on the line. In hospitals for insane I prefer to use five-inch soil pipes, owing to the somewhat greater danger of the soil pipes becoming stopped up by a wrong use of the water-closets. Waste pipes are made either two or three inches in diameter, this depending upon the character and number of fixtures placed on the line. Slop-sinks require three-inch waste pipes. Hospital bath-tubs and spray-baths require larger waste pipes than used in private houses in order to empty quickly.

As regards the inclination to be given to the house sewers and horizontal waste pipes, one-quarter of an inch is the minimum fall permissible. I prefer to give to four-inch lines a fall of one-half inch to the foot, and smaller waste pipes should have an even greater fall.

Connections of branch waste pipes with the main vertical lines are made with Y branches or else with T-Y branches, but the latter fittings should not be used in horizontal lines. Lead pipe should only be used for the water-closet connections and for short waste pipes. In connecting same with iron pipes drawn-brass ferrules or screw nipples should be used, which must be bell-shaped and extra heavy.

Brass floor-plates should be used for water-closets having the trap above the floor, in order to insure a tight floor joint.

Where brass pipe is used for waste or vent pipe it should be seamless drawn-brass tubing of iron pipe gauge, and all connections should be screwed joints. No slip or coupling joints should be permitted on waste or vent pipes.

Clean-outs should be placed in sufficient number on the line of the drains and at junctions, bends and traps, and made accessible. They should be closed with extra heavy brass screw caps, with thick flanges, and with strong square or hexagon nuts. To insure a tight joint there should be at least six engaging threads.

Roof joints should be made with copper or sheet-lead flashings. In case some of the rain-water conductors are connected for special reasons with the sewer system, they must be properly trapped. Inside leaders should be of extra heavy cast-iron, or else of heavy screw-jointed wrought-iron pipe; outside leaders may consist of sheet-metal.

No traps should be placed at the foot of any vertical line of soil or waste pipe. All such lines should be fully ventilated by extensions through the roof. Where back-air pipes are used I prefer extending them to the roofs separately. The pipes on the roof should remain fully exposed, and vent caps, return bends or cowls should not be used. Pipes should be kept away from dormer windows, also from flues and ventilating skylights. Pipes coming through lower roofs of extensions must be extended to the main and higher roof whenever they open too close to windows. All vertical vent lines should be dripped at the bottom of the line, and care should be taken, where traps are back-aired, to enter the branch vent into the main line above the overflow point of the fixture, so that the vent cannot act as waste when the latter should become stopped up.

Mason's traps, D-traps, bell traps, pot, drum or bottle traps should not be used; likewise should mechanical traps, with flap valves, gravity balls, rubber floating balls, mercury seals, etc., be avoided. Traps having interior dividing partitions forming the trap seal are objectionable, as being liable to have sandholes in the cast partitions, which would render the seal inefficient. All traps should have trap or cleaning screws, which must be arranged so as to be below the water-line in the trap, for if on the sewer side of the trap seal they may leak sewer air when not tightly closed. Lead traps should be extra heavy and of the same weight as lead waste pipes. Brass traps must be of iron-pipe size, and should be manufactured perfectly smooth on the inside, for roughness of the interior of a trap tends to stoppages. Every fixture should be trapped separately. The sizes of traps for fixtures should be as follows: For water-closets, 3½ or 4 inches; for slop sinks and floor drains, 3 inches; for kitchen and other large sinks and for washtubs and spray-baths, 2 inches; for pantry and small sinks, for wash basins, etc., 1½ inches. Bath-tubs should have 1½ or 2-inch traps, the latter emptying the fixture more rapidly. Urinals are usually trapped by 2-inch traps, though 1½ inches would seem to be ample in all cases. Traps located under the cellar floor should be made accessible by manholes.

In toilet-rooms floor drains are often desirable, and must be very securely trapped. Wherever possible floor drains should not be connected with the sewer system. They, as well as cellar floor drains, may connect with the land drains.

No exhaust steam or steam drip pipe should be connected with a sewer or soil pipe, but they must discharge into a condensing and blow-off tank, with outlet pipe connected to the sewer outside the house trap.

Pan-closets, valve and plunger closets should never be used. All water-closet bowls should have flushing rims. Water-closets having traps located below the floor should have either heavy lead traps or else iron traps, which must be enameled on the inside. Overflow pipes of water-closet cisterns should discharge into the water-closet bowl. Overflow pipes of other fixtures should connect with the waste pipes on the house side of the trap or else below the water-line.

Local vent pipes for plumbing fixtures complicate the arrangement and are not necessary where a good ventilation of the room has been provided.

Water pipes for plumbing fixtures should never be run on outside walls or in exposed places, where they would be liable to freeze.

A final correct plan of the sewer and drain pipe system as constructed should be drawn and kept on file for reference, or else all changes made during construction should be noted on the original plans of the work.

All plumbing systems should be tested, first, by the water pressure test when the " rough " work is in place, including water-closet branches and branches to fixtures; second, by a smoke test when the water has been turned on at all pipes and fixtures.

SUBDIVISIONS OF HOSPITAL BUILDINGS.

In every kind of hospital there are certain subdivisions, which in the case of the larger and most completely fitted institutions are generally located in separate buildings. These subdivisions comprise: First, the hospital wards, with their adjoining service-rooms, such as baths, lavatories, water-closets, broom-closets and room for the nurse in charge of the ward; the administration building, with rooms and offices for the superintendent, the steward and the medical staff; the nurses' sleeping apartments, toilet and bath-rooms; the matron's quarters; the operating-rooms, with rooms for the appurtenances belonging thereto; the drug store or dispensary; the working department of the hospital, consisting of kitchen, scullery, pantries and serving-rooms; the bakery and laundry; rooms for male and female help; the boiler and engine-room; the dynamo and pump-rooms; the disinfecting-room or station; the mortuary, ice-house and garbage crematory, and sometimes a stable. All these departments must be fitted up with more or less plumbing and drainage appliances. In the following each of these will be briefly considered.

WARD WATER-CLOSET ROOMS AND FIXTURES.

The room containing the ward water-closets should be convenient to the ward, but not immediately adjoining the same. It should be a room by itself, and should not contain the lavatories or the baths. It should contain only the water-closets, the urinals and the slop-sinks. It is better to provide separate water-closets for nurses and attendants.

The number of closets to be provided for a ward depends upon the size of the ward. It is usual to estimate one closet for each ten patients, though this number may be slightly varied in the case of insane patients and on the women's side of the hospital.

To promote cleanliness all parts of the toilet-room should be amply lighted, and structural materials should be used for the walls, floors, ceilings, partitions and fixtures which are non-absorptive and permit of easy cleaning. All sharp corners, moldings and cornices which harbor dirt and dust should be done away with. Woodwork which is very absorbent should not be used at all for wainscoting of the room or for partitions. Common plaster, paint and varnish also absorb organic impurities, and cannot be approved.

The floor should be tiled with unglazed encaustic tiles, or with large slabs of marble or slate; mosaic tile floors may also be used. The floor is sometimes arranged pitched to one point, and a floor cesspool and drain provided, so as to permit the washing of the entire room with a hose.

The walls to a height of at least six or seven feet should be lined with glazed tiles, or still better, with large slabs of marble or slate, or soapstone. The ceiling is either arched with brick arches or made of sheet-metal painted with enamel paint. The partitions between the fixtures should also be of marble, slate or of opaque glass. The suggestion to use hammered or annealed glass for wall linings or partitions dates back from 1875, but only recently have such been manufactured and used. It is preferable not to have partitions reach to the floor, but to raise them about eight or ten inches, which will facilitate the cleaning of the floor. In the same way it is better not to extend the partitions to the rear wall, but to stop the same about two inches from the wall, so as to be able to reach the wall, also to avoid the sharp corners between partitions and wall slabs, which easily accumulate dirt, and are difficult to keep clean.

Sharp corners should also be avoided between the wall lining and the floor by rounding off the corners or using round moldings of tile or marble. In the case of hospitals for insane it is usual to omit the partitions between the seats. Closet doors are also often omitted where control of the patients is necessary. Where doors are used they should be short light flap doors not reaching to the floor, and preferably hinged so that they will stand open except when the seat is occupied.

The water-closet fixtures suitable for hospitals should be of white earthenware, or where greater strength is required or a rough usage is expected, as in the case of hospitals for the insane, they should be made of heavy glazed fireclay or stoneware. Iron water-closets are not serviceable in the long run; plain iron closets never look clean, and enameled bowls, which are somewhat better, soon lose the enamel lining by chipping, and then rust rapidly. The only suitable and sanitary types are the pedestal wash-down and the siphon-jet closets, but the latter are more liable to stoppage, and are unsuitable, especially so for closets to be used by insane patients. All ornamentation of the closet bowl is of course entirely out of place in a hospital. Plain white fixtures should be used. The only woodwork should be the seat, which must not be a full seat, but an open, round, hardwood, polished seat, attached to the rear of the closet bowl by hinges, so that it may be turned up to expose the bowl for cleaning. For the sake of cleanliness a form of water-closet bowl offers advantages for hospitals in which the front of the wooden seat is cut out and a vertical projection formed in the front part of the top of the bowl, which acts also as a urine shield, and prevents urine from being spilled over at the front of the closet. Of late years a modified type of closet has been used to some extent in hospitals for insane, which dispenses with the wooden seat, the top of the bowl being formed in porcelain to serve as a seat. In the case of filthy insane patients these closets offer certain advantages. For quiet and clean patients I cannot see any objection to a plain wooden seat if the latter is strongly framed and otherwise well made, so as not to crack or warp. The objections to an all-porcelain seat are that it is cold; that no seat attachment can be used, and therefore an automatic flush must be arranged, which is somewhat wasteful of water; and there is the further important objection that the inside of the upper part of the closet bowl cannot be readily examined and cleaned.

For general hospitals the flushing arrangement for the closet may consist of the well-known chain and pull arrangement; for some insane patients it is better to use an automatic seat attachment flush in combination with either an open or a closed pressure tank, or else a combination automatic and pull tank may be used, for in the quieter wards it is found that patients will make use of the pull. The flushing cisterns should be copper-lined wooden tanks, as iron tanks rust and stain the closet bowl, also because they sweat in summer time and cause drippings from the tank to the floor. The flush pipe should be large, at least 1¼ inches inside diameter, and may be of lead, or of brass, or polished and rustless steel. Lead should not be used in hospitals for insane, as it is too easily dented, or cut, or flattened. Brass flush pipes may be polished and lacquered, or else they are finished in dark bronze or have a bluish-steel finish; they also look well if silver-bronzed or painted with enamel paint.

Urinals should be avoided as much as possible, and generally the water-closet fixture may take their place. If required, urinals for wards should be porcelain fixtures holding water in the bowl, fastened to the marble wall lining, and provided with automatic flush tank. If a marble floor slab is used, it should not have a waste, for this becomes foul from the drippings of the urine. In some general hospitals bidets are installed on the women's side, and if provided with flush may answer as urinettes; for insane patients such fixtures are not to be recommended.

The slop-sink may properly be placed in the water-closet, for it is a fixture intended to receive the foul discharge from bed-pans, chambers, glass urinals, commodes, and other sick-room utensils, and to be used for the rinsing and washing of these fixtures. It must therefore be treated much like a water-closet, and should always be of a type with flushing rim, and provided with flushing cistern. Hot and cold water faucets should also be provided.

All fixtures in ward toilet-rooms should be selected with a view of accomplishing the most complete and rapid removal of all dejecta and fouled liquid wastes. Perfect flushing arrangements and an ample supply of water for flushing purposes are required. Likewise should proper provision be made for a perfect ventilation of the apartment, and under no circumstances should any movement of air take place from the toilet-room towards the wards.

WARD BATH-ROOMS.

Ward bath-rooms should be in convenient reach of the ward, but should be disconnected from them by a corridor, so as to exclude and cut off all steam vapors. The bath-rooms for patients should be separate from those for the nurses and attendants. The room should have plenty of light, and windows should have frosted, opaque or frilled glass. The best floor is a solid floor, made by using I beams and brick arches. These may be covered either with concrete and cement or with asphalt, so as to be water-proof. A nicer effect and appearance are gained by adopting a mosaic tile floor, or finishing the floor with large slabs of marble, or finally using small vitreous tiles. Glazed tiles should never be used in a bath-room, as they render the floor too slippery. A new floor finish consists in a rubber interlocked tile floor, which is durable, warm to the feet, soft to walk upon and perfectly sanitary, though somewhat more expensive than a tile floor. The walls of the bath-room should be finished with a water-proof and non-absorbent material, such as enameled brick, or slate, or marble, to a height of at least six feet. Such a room can be kept pure and clean by turning on a stream from a hose and washing the entire sides. As the ceiling is exposed to vapors of steam, it should also be solid, either finished in hard plaster and painted with oil or enamel paint, or else the same should be constructed with sheet-metal. The door leading to the bath-room should be made large to admit a patient carried on a stretcher. The bath-room should be well ventilated, and must be well heated. In some hospitals this is efficiently accomplished by heating the floor of the room.

The number of bath-tubs to be provided depends upon the number of patients in the ward. It is usual to calculate one tub for each fifteen patients; where two tubs are necessary one should be a hospital tub set on rubber-bound wheels, so as to be movable and not fixedly connected to the plumbing pipes. The floor of the room should be given a good pitch to one point, where a floor drain should be placed. The hospital tub is emptied at this point, and large hot and cold water mixing cocks should be provided for quickly filling the tub.

The fixed bath-tub should stand free on all sides from the wall, so as to enable the nurses to reach the patient conveniently. The tubs may be strong sheet-metal tubs standing free on legs and not having the usual wooden casing; or they may be porcelain-lined iron tubs, or the more expensive heavier porcelain tubs with roll-rim. As a rule enameled iron answers well enough as a material for tubs if care is only exercised in the use of the tub. The enamel is somewhat apt to chip off or to crack where anything heavy is allowed to drop into the tub. To avoid the diffusion of steam vapor in the room mixing faucets for hot and cold water are used. In hospitals for insane patients the supply valves should be always out of reach of the patients to avoid accidents or intended suicide by scalding, or else key valves should be used.

Of late years a much more effective, clean and economical method of bathing the insane has been introduced, by means of rain or spray baths. In the State hospitals of New York State such spray-baths are obligatory, and tubs for patients are entirely abolished. The advantages of this new method have been universally admitted, and the old tubs are everywhere being replaced by the simpler and better spray-bath. In some cases a congregate bath-room is fitted up, which enables the simultaneous bathing of a large number of patients. A good example, and the first one of á large bath-house for insane, may be seen at the Utica State Hospital, which was designed and installed by the writer. Another similar bath-house is now in course of construction at the Long Island State Hospital, at King's Park. In many other hospitals each ward is provided with one or two spray-baths. The apparatus is very simple, consisting of an overhead inclined douche or nozzle, supplied with mixed water at a temperature not exceeding 100° Fahrenheit. Special mixing chambers for hot and cold water are used, or else a new appliance, called a "Gegenstrom" apparatus, in which steam and water pass in opposite directions, the water being heated as it flows, and doing away entirely with hot water tanks and mixing chambers.

Large city hospitals are sometimes provided with a bath-house in a separate building, wherein all kinds of medicated and special baths are put up, including sometimes Russian and Turkish baths, cabinet vapor baths, baths for hydro-therapeutic treatments, electrical baths, sun baths, sitz and foot baths, bidets, etc. For the treatment of certain ailments European hospitals are also provided with so-called permanent water-baths. In all bathrooms and bath-houses special provision should be made for warming the change of linen for the patients.

WARD LAVATORIES.

A separate room adjoining the ward should contain the lavatories for the patients. This room should be finished the same as the bath-room, and it should contain one washbasin for about eight or ten patients. In addition a small, shallow, porcelain housemaid's sink is often put in this room for drawing hot or cold water. To discuss the type of basin best adapted for hospitals would lead me too far; I will only mention that all washbasins with secret waste valves and hidden overflow pipes should be avoided. The entire arrangement should be open and unin-closed; there should be no cupboards and no wooden enclosures. The modern all-porcelain lavatories are particularly adapted for use in hospital wards, as they have no plaster-of-Paris joints between the bowl and the marble slab. All basins should be quick-emptying, and should have hot as well as cold water faucets. It is important that each basin should be separately trapped. In lavatories for insane patients the hot water faucets should have detachable key handles.

NURSES' TOILET-ROOMS.

There should be separate baths, lavatory and water-closet accommodations for the hospital nurses. While the basins and the bath-tub may be put in one room, a separate apartment should contain the water-closet. The details of these appliances do not call for special discussion, as they do not differ essentially from those used in private houses. For water-closets I recommend the type known as pedestal short-hopper or wash-down closets, with polished hardwood seats, and with cisterns operated by chain and pull. The trap should be of earthenware in one piece with the bowl, and should have about three inches of seal. The bath-room should contain a tub and a spray-bath.

In larger general hospitals, and also in the hospitals for the insane, a separate building is often provided for the nurses, containing not only bed-rooms, but also sitting-rooms and reading-rooms for the nurses, a lecture-room for the nurses of the training school, as well as toilet-rooms.

BATH-ROOMS FOR THE OFFICERS AND MEDICAL STAFF.

In the administration building provision should be made for toilet-rooms for the executive officers and for the medical staff. Likewise should bath-rooms be attached to the living-rooms of the resident physicians or the superintendent. The plumbing work for these would be of the same character as provided for in private houses. We can therefore safely pass these over, except that I wish to plead once more for the separation of the water-closet and the bath-tub, and this for reasons which I have often set forth, and which should be apparent to all thoughtful persons. The water-closet most adapted for use in private bath-rooms is the modern siphon-jet closet, with deep trap seal, and with open seat attached to the bowl, and without back piece or panel board.

OPERATING-ROOMS.

Every hospital has either one or several operating-rooms, and the larger clinical hospitals are generally provided with operating theatres, which are fitted up with all modern requirements of aseptic surgery, and also contain more or less plumbing work. It is self-evident that the operating-rooms are of particular importance and require the very best and safest plumbing work in order to avoid the danger of blood-poisoning or of contagion.

All parts of an operating-room should be so constructed and fitted up as to be readily cleaned and made aseptic. There should be plenty of light, perfect ventilation and abundant facilities for washing and flushing. All instruments, bandages, utensils and vessels must be made germ-proof or sterilized. Sterilized water should be available for the operating surgeon to wash his hands with. All tables and furniture, like stretchers, operating tables, instrument cabinet cases and tables, immersion bowls and other accessories, should consist of white-enameled wrought-iron frames and polished glass tops. The floor of the room should be tiled and provided with floor drains for washing. The walls and even the doors are lined with large slabs of marble, slate or Alberene stone; enameled face brick is often used for the walls from floor to ceiling.

No soil or waste pipes connected with the hospital sewer should pass through the operating-rooms. The plumbing fixtures located in the rooms should be disconnected, *i. e.*, should discharge with open mouth over a trapped basement or cellar sink provided with faucet. The highest character of workmanship is required at the fixtures in the operating-room. There should be porcelain sinks with glazed roll-rims, and without woodwork of any kind. Drain-boards, if any are required, should be of slate, Alberene stone or of glass. The best sanitary washstand fixtures should be used. Modern hospital washstands, consisting of glass bowls fitted up in connection with glass slabs, are now purchasable. These are generally fitted up with self-closing pedal supply valves, in connection with a nozzle, giving either hot, cold or mixed water. Sometimes the basin waste valve is similarly operated by a foot action. Pressure sterilizing apparatus for water must be provided, generally one for hot and another for cold water, likewise sterilizers for surgical dressing bandages, and for surgical instruments and appliances; also buckets to receive the waste dressings, which are to be burned. While these are not strictly belonging to plumbing work, they require water and gas-pipe connections, drip pipes, and also steam connections. In convenient location near the operating-rooms there should be toilet-rooms, where surgeons and attendants can put on their operating suits, and with washbasins, water-closets, urinals and with spray-baths.

KITCHEN.

In large hospitals the kitchen is always located in a separate building. In smaller institutions it is placed either in the basement or on the ground floor of a wing of the building. In a few cases the kitchen is placed on or near the top floor, the idea being to prevent cooking odors from pervading the other parts of the hospital.

A hospital kitchen should be light, airy and well-ventilated. Floors and walls should be finished in non-absorbing, easily cleaned materials. The floor should be drained to one or several floor cesspools. A sufficient number of kitchen sinks of ample size should be provided to draw water for the cooking operations, and also for the cleaning, rinsing and scouring of pots, kettles and pans. The most durable sinks for use in the kitchen of an institution are cast-iron sinks, those of plain iron, painted on the outside, being undoubtedly the most serviceable, although not so cleanly looking as enameled or porcelain sinks. With the rough usage which these fixtures unavoidably undergo the enameled iron would soon chip off or crack. Porcelain sinks, with roll-rims, are likewise liable to be damaged. In many institutions wooden sinks are used; for a few months they will be serviceable, but they soon rot and become foul-looking and smelling, and I could never see any real merit in them other than that of cheapness. Sinks generally require drain-boards, which likewise should not be of wood. I have found slabs of slate or of Alberene stone to be durable and serviceable.

The kitchen ranges should be proportioned to the number of people for which cooking is to be done. In some cases this and other cooking apparatus are fitted up by the plumbers, but as a rule they are installed by firms making a specialty of such work. Even then the numerous appliances, such as steam-jacketed boiling vessels for making soup, boiling meat, vegetables or puddings; the tea and coffee copper urns; the gas or steam ovens, roasters and broilers, will require water connections, drip pipes for the drip pans, and sometimes gas connections. Steam carving and serving tables are also placed in the kitchen, unless the pantry is very large, when they are sometimes located in the latter by preference. Inasmuch as the population of a hospital is liable to vary considerably, it is better to provide all the kitchen outfit in duplicate, so as to have facilities for cooking economically for a smaller number of persons.

Adjoining the kitchen there should be a roomy store-room for the kitchen supplies.

SCULLERY.

It is better to subdivide the various kitchen operations in such a way that they may be carried out in adjoining rooms. Where the building permits this, it is well to have a scullery adjoining the kitchen, in which the preparing of the vegetables, the washing of potatoes and salads, of meats and fruit, etc., may be done, and also the washing of the plates and dishes. Plenty of sinks should be arranged, and each provided with hot and cold water and with drain-board. In some modern institutions the washing of the dishes is done in large dish-washing machines, which, although expensive, effect a considerable saving in manual labor. These and the sinks should be provided by the plumber with a large grease trap. I recommend to locate the grease trap outside of the building, because it has to be frequently cleaned, and this operation is by no means pleasant. The general finish of a scullery should be similar to that of the kitchen.

PANTRY.

A pantry is always planned near or immediately adjoining the dining-room. It should contain sinks for the washing of the finer dishes, of the glasses, cups and saucers from the dining table. While porcelain or slate sinks are cleanly and sanitary, they are hardly suitable for a hospital pantry, where, owing to the carelessness of servants, too many dishes and glasses would be broken in them. Copper sinks are probably best adapted for the purpose, although the evil of breaking porcelain and glass is somewhat mitigated where rubber mats are used in porcelain sinks. Owing to the greasy nature of the dishwater, it is often necessary to use a grease trap in connection with the sinks. Hot plate warmers are also put in the pantry, likewise germ-proof filters for the drinking water used at the table, and occasionally small portable refrigerators for butter, jellies and smaller articles of food. It is important that the refrigerator should not be directly in connection with any soil pipe or sewer. It should always be thoroughly disconnected, and have an open waste or discharge over a trapped and water-supplied sink.

BAKERY.

In large hospitals the bakery is placed in a separate building, while in smaller institutions the baking is done in a basement room near the kitchen. Here bread and pastry are prepared, and the operations generally require several rooms, namely, a room for the mixing and kneading of the dough and making of the loaves; a room for the bake ovens; a store-room for the flour, and another for the finished products.

The plumbing work is generally very simple in character. A sink for drawing water is required, also troughs of wood, or better of slate, for the preparation of the dough. In a few hospitals dough-kneading machines driven by steam power are in use. The bake ovens are heated either with coal, gas or hot water.

REFRIGERATOR-ROOM AND ICE-HOUSE.

Large hospitals require cold-storage rooms for meat and fish, for butter and other supplies. These should be arranged in every way sanitary, and in view of the fact that meat readily becomes tainted, and that milk absorbs impurities, the greatest care should be exercised in the drainage arrangements of refrigerating-rooms. No direct connection with any foul water sewer should be tolerated.

Hospitals require large quantities of ice for various purposes, and where no refrigerating plant is installed an ice-house will be a desirable feature. Much attention should be given to the source of the ice supply, to avoid the dangers of impure ice. The drainage of the ice-house requires great care, and should any sewers necessarily pass near by, it will be necessary to take precautions to avoid any leakage of sewage towards the ice-house.

LAUNDRY.

The laundry is a very important adjunct of every hospital. A location for same separated from the wards and the main building is always desirable to avoid the annoyance from steam vapors permeating the building. As a rule it is desirable to place the laundry in a separate building. This should be a roomy structure, providing ample space for the laundry operations. The building will require several subdivisions. There should be a room for the soiled clothes, a large wash-house, a drying-room, an ironing-room and a room for the storage and assortment of the clean linen, in which sewing and mending may also be done. Sometimes a separate small laundry is provided for the washing of the officer's linen. A disinfecting and fumigating room for the soiled linen and bedding of infectious disease patients should be a part of every complete hospital laundry.

A laundry building will require a good deal of plumbing and also laundry machinery, for which steam and water supplies and wastes must be arranged. The wash-room proper contains the wash-tubs, the number of these depending upon the population of the hospital. Wash-tubs, which formerly were of wood, are now obtainable at reasonable prices in white or yellow stoneware with roll-rims, thus doing away with wooden frames or tops, which are an abomination and never last beyond a few months. The tubs should be properly trapped and connected with separate Y-branches to the line of the drain pipe. Hot and cold water pipes should be provided of ample size to supply all the faucets of a row of tubs if running simultaneously. Washing machines are not usually connected with the drains, but discharge over open concrete gutters, with trapped outlets to the drainage system. Sometimes the room contains rinsing machines, steam-boiling kettles, soap kettles, etc. Centrifugal dryers or wringers are provided, which must have trapped floor connections to remove the drippings from the wash.

The remaining outfit of a steam laundry consists of drying-rooms with horses, steam mangles and special ironing machines for shirts, collars and cuffs, starch kettles, an engine to drive the shafting for all machinery, and stoves for heating the irons, all of which require steam or gas connections. A laundry is often the place where a fire starts in a hospital, and it may be wise to guard further against this calamity by providing not only fire stand pipes, with fire valves and fire hose, but also a complete automatic sprinkler system, requiring roof tanks, piping, valves and sprinkler heads.

BOILER-HOUSE.

The hospital boiler-house, containing the steam-heating and power boilers, the coal vaults, the boiler feed, house and fire pumps, sometimes a suction tank, the dynamos and engines and switchboard, will require a good deal of plumbing work in connection with the supply and discharge piping and necessary cross-connections of the pumps. Sometimes the general hot-water tank for the institution is placed in this building. There should also be a small engineer's toilet-room, with water-closet, washbasin and sink, and a spray-bath for the firemen.

DRUG STORE AND DISPENSARY.

Every hospital requires a drug store and often has a public dispensary. This department should be fitted up with a sink for washing of bottles and for drawing water; sometimes a separate washbasin is fitted up. There may also be a pressure filter to obtain pure water. Adjoining the waiting-room of the dispensary there should be separate public toilet-rooms for men and women.

EMPLOYES' WATER-CLOSETS.

For the large number of employes, constituting the male and female help in the working departments of a hospital, suitable toilet-room accommodations must be provided. These do not require special description, but I may here remark, with regard to the plumbing of servants' water-closets and also the general plumbing in the kitchen, scullery, pantry, bakery, laundry and boiler-house, that there seems to be a general and very erroneous impression prevailing that anything in the way of plumbing will answer the purpose, provided that there is a water supply and a waste connection, and that the separate trapping of fixtures would here be an ultra-refinement and vent pipes to the roof an unnecessary expense. I have found in my examinations of public institutions a great deal of defective and slovenly plumbing work in the working department of hospitals, much lack of cleanliness and a great indifference on the part of those in charge to the same. These departments of a hospital require the same correctness in planning, careful execution of the work, and good substantial fixtures as the bath-rooms and toilet-rooms for the patients and officers. The rooms where the food supply is prepared should be free from any possible sewer-air contamination, not only to guard against the food becoming contaminated, but also to protect the health of the kitchen and laundry employes.

MORTUARY OR DEAD-HOUSE.

Large hospitals always have a small separate dead-house, where dead patients are kept pending burial or post-mortem examination. The principal room should be finished entirely with non-absorbent materials, so that it may be washed from time to time by means of a hose. The floor should be tiled and provided with floor drain and sewer connection. There should be a porcelain roll-rim sink, with hot and cold water. For anatomical dissecting there should be a slate, marble or glass slab, or post-mortem table, arranged to revolve, with a waste connection and with overhead supplies to which rubber hose may be attached.

DISINFECTING STATION.

Modern hospitals are also provided with a disinfecting station, which is generally in a separate and detached building. This may serve not only the purpose of disinfecting linen and clothes of infected patients before they are received in the hospital, but also for the disinfection of soiled articles before washing, of bed mattresses and other bed-room furniture by means of either steam or formaldehyde. Generally the disinfecting station is provided with a bath-room having a spray-bath for the use of the attendants. This building is an important adjunct of every hospital for infectious diseases. Usually the disinfecting-room is divided by a solid partition in two parts, in one of which the things to be disinfected are placed in the apparatus, while they are taken out at the opposite end in the next room.

Every hospital should have a portable disinfecting apparatus for safely generating large volumes of formaldehyde gas, which may be used in the disinfection of the hospital wards, or for ward utensils and bedding, or for disinfecting excreta and other wastes.

GARBAGE DISPOSAL.

Large hospitals should have a garbage furnace or cremator for the destruction by fire of the garbage and soiled waste matters, of the infected surgical bandages, dressings, and of the other numerous refuse of the institution. This garbage cremator can advantageously be erected in the boiler-house or immediately adjoining the same.

SEWAGE DISINFECTION.

In infectious disease hospitals provision should be made for the disinfection of the excreta of typhoid fever and cholera patients. This is also advisable in the case of the sputum of patients suffering with phthisis. The disinfection may be accomplished by means of steam under pressure, with the addition of chemicals such as permanganate of potash. In some of the European hospitals the water-closet fixtures for infectious patients are arranged with steam connection, so that an immediate disinfection of the excreta may be carried out in these fixtures. All such arrangements require special treatment, but a detailed description would lead us too far.

HOT WATER SUPPLY AND WATER SUPPLY FOR FIRE PROTECTION PURPOSES.

Hot water is required in a hospital in great abundance. As a rule this is obtained from closed round-steel or boiler-iron tanks, in which a brass or copper steam coil is placed, which serves to heat the water. It is desirable to maintain an even temperature of the tank water, and this may be accomplished by the use of thermostats or temperature regulators. A somewhat different hot water generating device is the Tobey heater, which has been used to some extent in large hospitals, and which consists of a large horizontal heater, with automatic steam valve, regulated and operated by an expansion rod located in the upper part of the heater. This device prevents the overheating of the water, and thus tends to economy in fuel. It also enables the control of the temperature of the hot water, as the valve may be set to give water at any desired temperature, and thus avoids to a great extent the danger of scalding, which is ever present where the hot water may become overheated.

It is desirable in a large building to furnish hot water at various degrees of heat, therefore several heaters should be provided, one intended to furnish water for the baths and lavatories, in which the temperature need not exceed 150° F., the other to furnish hot water for dish-washing and kitchen purposes, which may be required at a temperature of about 180°. For the spray-baths the " Gegenstrom " apparatus has proved very successful, and not the least advantage of the same is the fact that it renders special hot water tanks entirely unnecessary, as it heats water by steam directly and almost instantaneously. There are other instantaneous water-heaters, using gas as fuel, which in some places in a hospital may prove efficient and serviceable.

No hospital building should be left without fire protection and fire-extinguishing appliances. There should be lines of fire stand pipes in all buildings, with fire valves and fire hose on every floor. These may be supplied either from the elevated roof tanks or from a special fire pump in the boiler-house. A number of fire pails should also be provided and set on shelves along the corridors and in unimportant rooms. A number of non-freezing fire hydrants should be placed in the hospital grounds, and the necessary lengths of rubber-lined fire hose should be kept in readiness in the engineer's department, or better in a special fire-engine house with hose tower, in which the hose, after practice fire drills, may be hung up vertically to dry.

* * * * * * *

In a well-managed hospital the most thorough cleanliness and a pure condition of the air indoors are secured by constant vigilance against all manner of dirt. Half the battle is won where the buildings have a good system of sewerage and plumbing. These will not only prevent a contamination of the atmosphere in the toilet-rooms, lavatories and sick wards by emanations from the sewer pipes and plumbing fixtures, but they will also render it impossible for the soil upon which the building stands to become polluted and give off gases injurious to health and fatal to disease. They will finally assist in the maintenance of absolute cleanliness of the walls and floors, of personal cleanliness, and purity of the water and food supply of a hospital.

36 UNION SQUARE, EAST NEW YORK.

For the ANNALS.

HOSPITAL EQUIPMENT.

BY C. IRVING FISHER, M. D.,

Superintendent of The Presbyterian Hospital, New York.

The founders of a new hospital are called upon to face a series of problems, on many of which their previous experience throws little light. The financial foundation and location having been settled, the construction of buildings follows, and must often be accomplished through an architect whose knowledge of the special adaptability of space, contour and finish to hospital utility must all be furnished him.

These ideas having been evolved with more or less success, the heating and ventilating apparatus having been built in, and the general schemes of plumbing having been decided, the new problems of furniture appear as the next step of advance. The question of what should be furnished in any specific case is not necessarily what is intrinsically best, but rather what is good and practical, suited to the space provided and the means at command.

The wise solution of so broad a question implies a complete examination of all the various forms manufactured, combined with a large experience in their use. The managers are usually busy men and women, whose hospital knowledge is from the outside and philanthropic point of view, and it often happens that while the building is going on, no one is on the ground who has lived within and directed the workings of such an institution. Hence many unsatisfactory things get built in, to which the after equipment must accommodate itself. The superintendent of the hospital or the head of the nursing department, if experienced and practical persons, can be of more value during the planning and construction than for any equal period of time thereafter.

The object of this article is not so much to specify things, as to call attention to those essential needs in the various lines of equipment, which are so well attested by the combined experience of hospital administration that they may be considered as established. A few general principles have the force of axioms, and must be always in mind in selecting, while size and shape in many cases may well be left to the individual taste of the furnisher. When number or quantity is specified, a ward of twenty beds for acute diseases is understood.

Cleanliness is the fundamental law of hospital regime. Everything, therefore, should be of the plainest possible finish, avoiding corners, grooves or filagree, where dust might collect, and crevices where vermin might take lodging. Special care should be taken to choose such materials as will reduce breakage and repairs to a minimum.

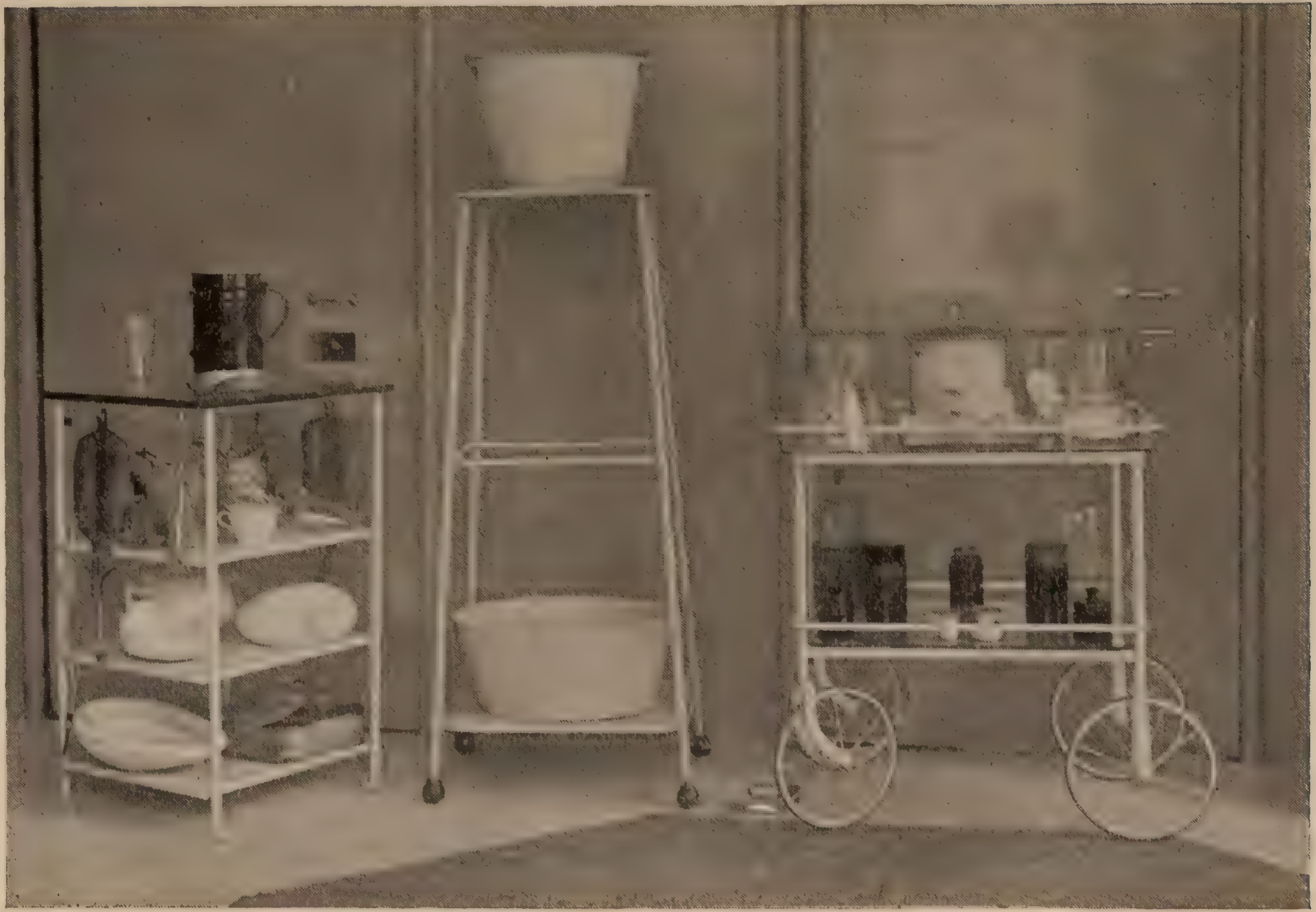
Plumbing. — While the plumbing is built in, it is so connected with the furnishings of bath-room, closet and lavatory that it may properly be discussed in this connection. It should always be " open," everything in sight, sufficiently away from the walls to be easily cleaned, and constructed with a view to repairs.

Plain polished brass piping and fittings are the best. Although more expensive in first cost than iron pipes, they remain free from deposit which in some waters is very great, and so render much longer service. Red brass fittings are pleasing to the eye, but still more expensive. Nickel plate tarnishes almost as readily as brass. Constant polishing soon wears away the nickel and causes an appearance which is unsightly, while it does not seem to justify the inconvenience and expense of frequent replating. It is just as easy to keep polished brass bright and shining, and it rather " improves with age."

Two water closets and one urinal will meet all demands, and these should all be screened from that portion of the room into which the nurses enter. Automatic fixtures for flushing do not

To Illustrate Dr. Fisher's Article on "Hospital Equipment."

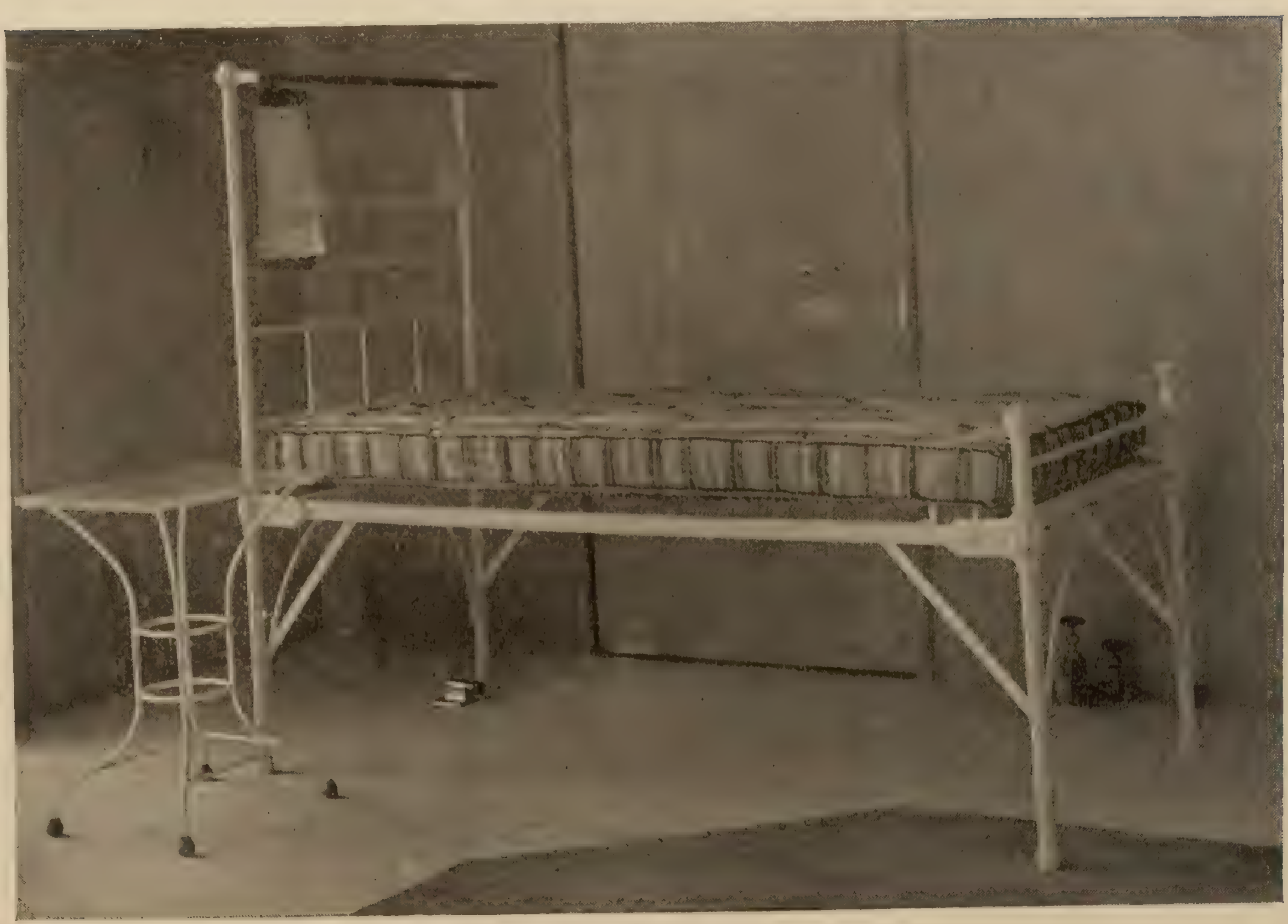
Albany Medical Annals, February, 1898.



THE UTENSIL STAND. THE IRRIGATING STAND. THE PORTABLE DRESSING STAND.

To Illustrate Dr. Fisher's Article on "Hospital Equipment."

Albany Medical Annals, February, 1898.



THE WARD BED.

commend themselves. They are frequently out of order, and the mechanism provides many corners which are not easily kept free from dirt. The syphon tank, which with a simple pull empties itself at each flushing, has given the most satisfaction in the long run.

Bath-tubs of solid porcelain or of iron porcelain-lined are the best, but the enamel will chip off from the iron if heavy things are dropped upon it; and it seems to disintegrate in spots after a few years' usage and must be relined. Plain iron painted tubs are much less expensive and meet all necessary conditions, but with these it is desirable to have one or two extra tubs kept painted and ready to replace those which need repainting. Every bath-tub should have an ample overflow, as the water will sometimes be left running and may do no small damage.

The slop hopper or sink is a necessity for emptying and washing bed-pans, and should be hidden by a screen. Solid porcelain sinks are clean, but bed-pans dropped into them are broken and the enamel of the sink may be injured. Of the solid porcelain sinks, a practical form is one in which the bed-pan may be inverted and cleansed by rising jets of water. The slop hopper made entirely of copper is clean, and reduces the possible breakage to the minimum. One of the most satisfactory forms consists of a funnel-shaped hopper about two feet in diameter at the top, narrowing to the size of the soil pipe (about four inches) and standing a little more than two feet high, with a liberal flush and a large, easily removable strainer at the bottom. Over this there should be a good force of water and a few feet of flexible hose-pipe with nozzle, attached to a combinaton faucet by which the temperature may be regulated. The combination faucet is very desirable for all places where the temperature of the water needs to be considered.

In the lavatory two washbowls are sufficient. If space permits, there may be placed here the sink with a draining slab of marble or slate for washing utensils, such as sputa cups, urine mugs and specimen glasses; also some glass shelves on which these may be kept, and a stand with shelves for heavier utensils, as bed-pans and washbowls. Here or in bath-room may be kept the hamper or other receptacle for soiled clothing. Ample bags of ticking are satisfactory for transporting to the

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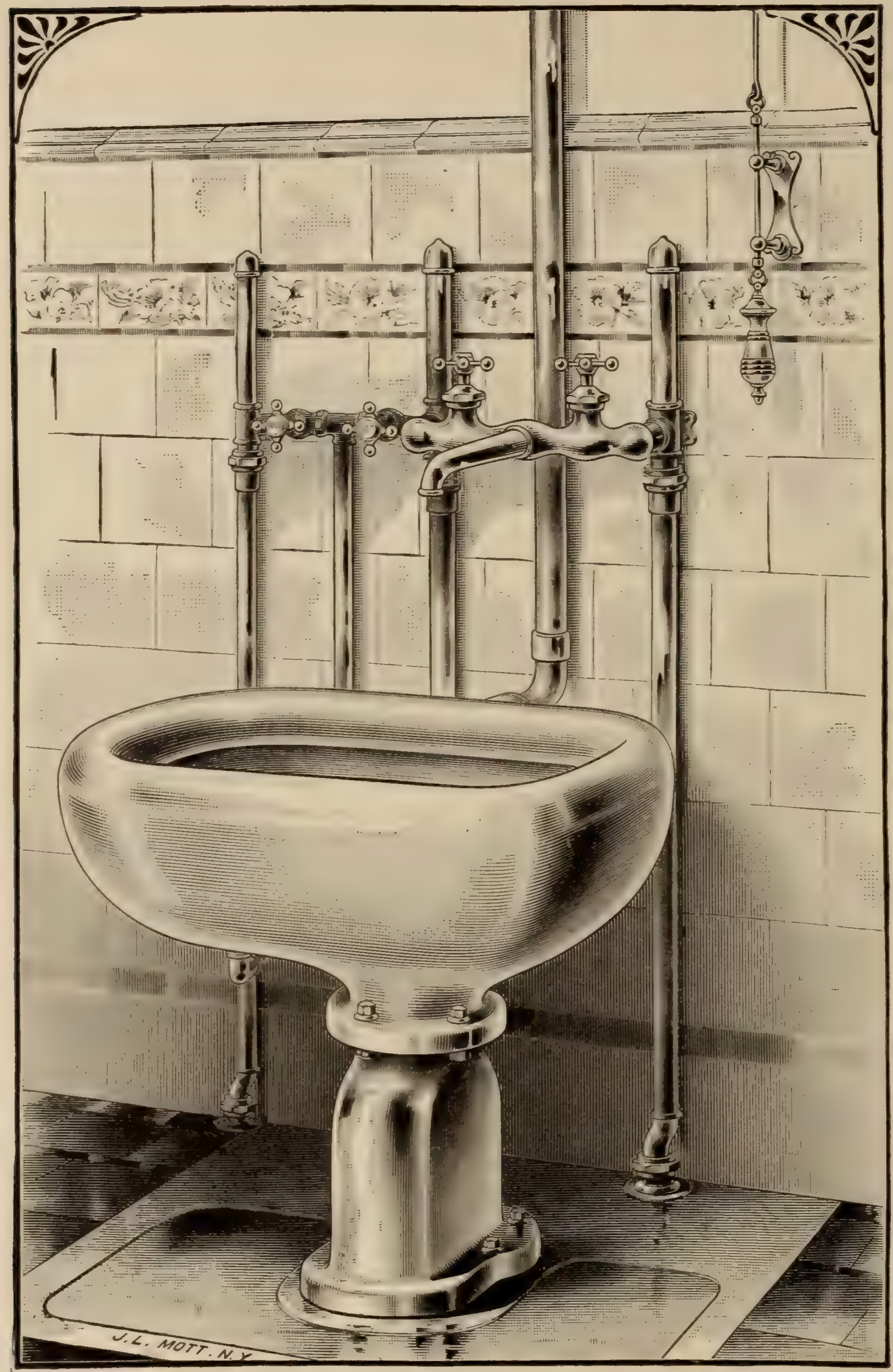

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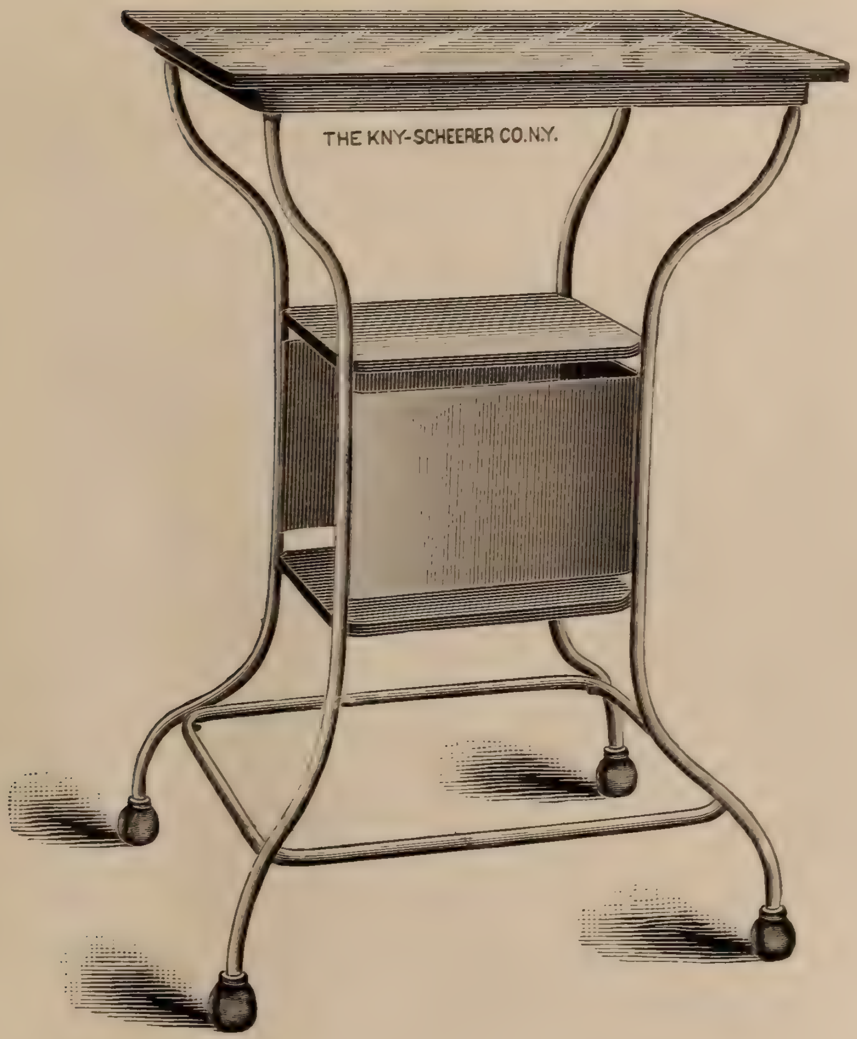
THE "CLINIC HOSPITAL SINK" OR HOPPER WITH WATER-JETS FOR WASHING BED-PANS.

To Illustrate Dr. Fisher's Article on "Hospital Equipment."

Albany Medical Annals, February, 1898.


THE KNY-SCHEERER CO. N.Y.

BEDSIDE TABLE, WITH SCREENED SHELF.

laundry. Clothing requiring prompt attention should not be retained here, but sent at once to that place in the laundry set aside and furnished with appliances for this purpose. Except the " rinse-room," the laundry equipment does not differ from that of the same department in any large establishment.

Ward Furniture. — We have practically entered an " iron age " as regards the furnishing of a hospital ward; that too, without undue expense, service and cleanliness considered.

The beds most in use and most popular are made with a high head with shelf, and a low foot frame. The high head, with three or four horizontal bars which a patient can reach and grasp, enables him to help himself in many ways. Three or four perpendicular bars prevent the pillow from sliding out at back. Under the shelf may be hung the chart-board, etc.

This bed can be made in one forging or with iron pipe. The former costs twice as much as the latter, but is free from joints where vermin may hide. The pipe bed, while not as free from this objection, still can be made so as to reduce the crevices to a minimum.

The woven-wire mattress is practical, and should have a " take-up " attachment, so that any sag can be taken out. For fracture cases a thin board, generously perforated with holes for ventilation, can be placed between it and the hair mattress. Mattresses five or six inches thick, made of best curled hair, have always given good satisfaction.

The dimensions of the ward bed are usually six feet three inches long by three feet wide. In a ward for men it is well to have one or two of extra length. The " high bed " — one in which the wire mattress is about thirty inches from the floor — is in favor with doctors and nurses, as on this the patient is handled more easily than upon a lower one.

The feet of the bed and of all iron furniture should be shod with wood so as not to deface the floor. Rubber is sometimes used, but soon deteriorates and does not slide so easily.

The table which consists of a frame of iron tubing and a glass top, meets all the requirements of cleanliness and appearance. Its first cost is more than any other, and the breakage of the glass top is a considerable factor. This usually results from placing a hot dish or poultice upon it; it costs about one dollar and

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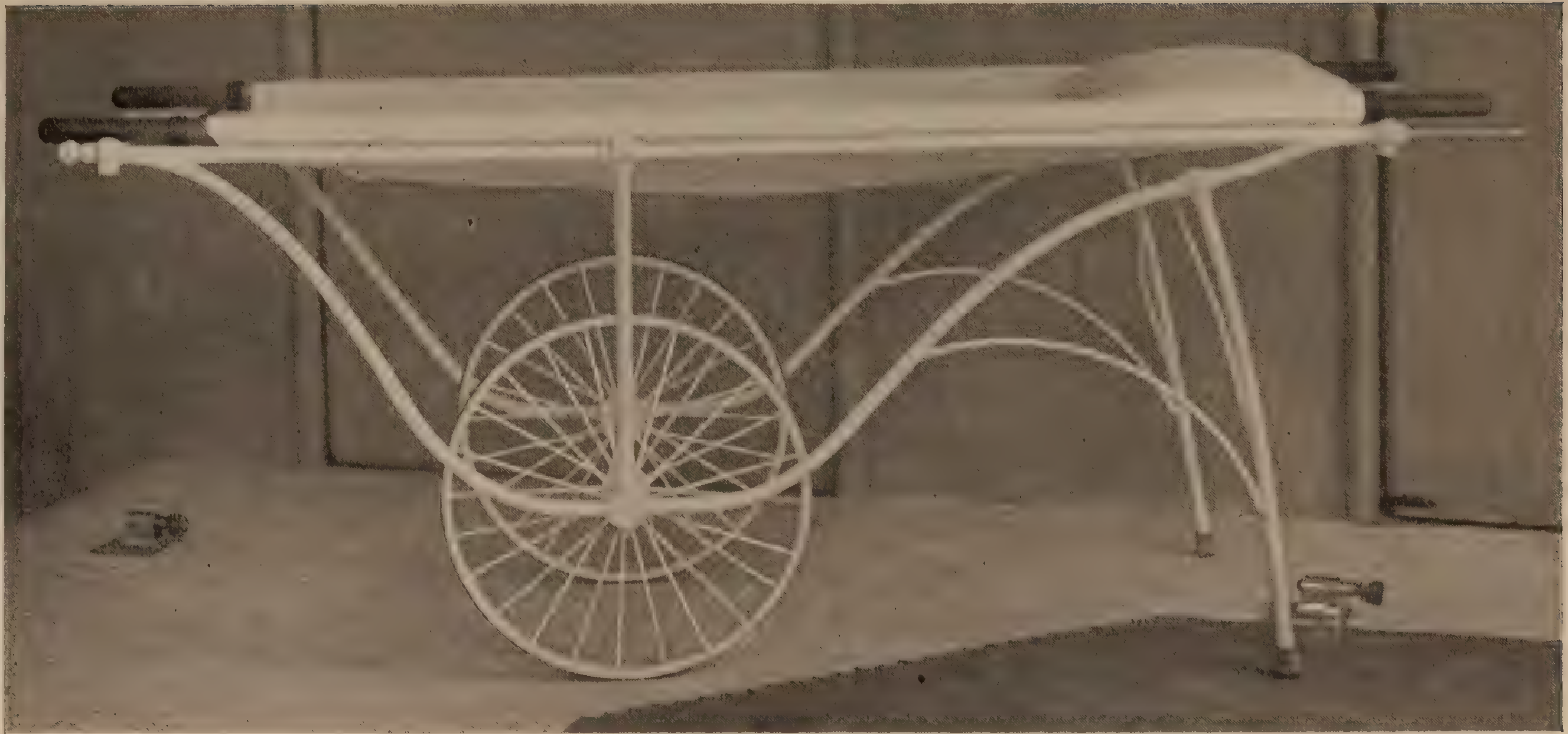

THE WHEEL STRETCHER.

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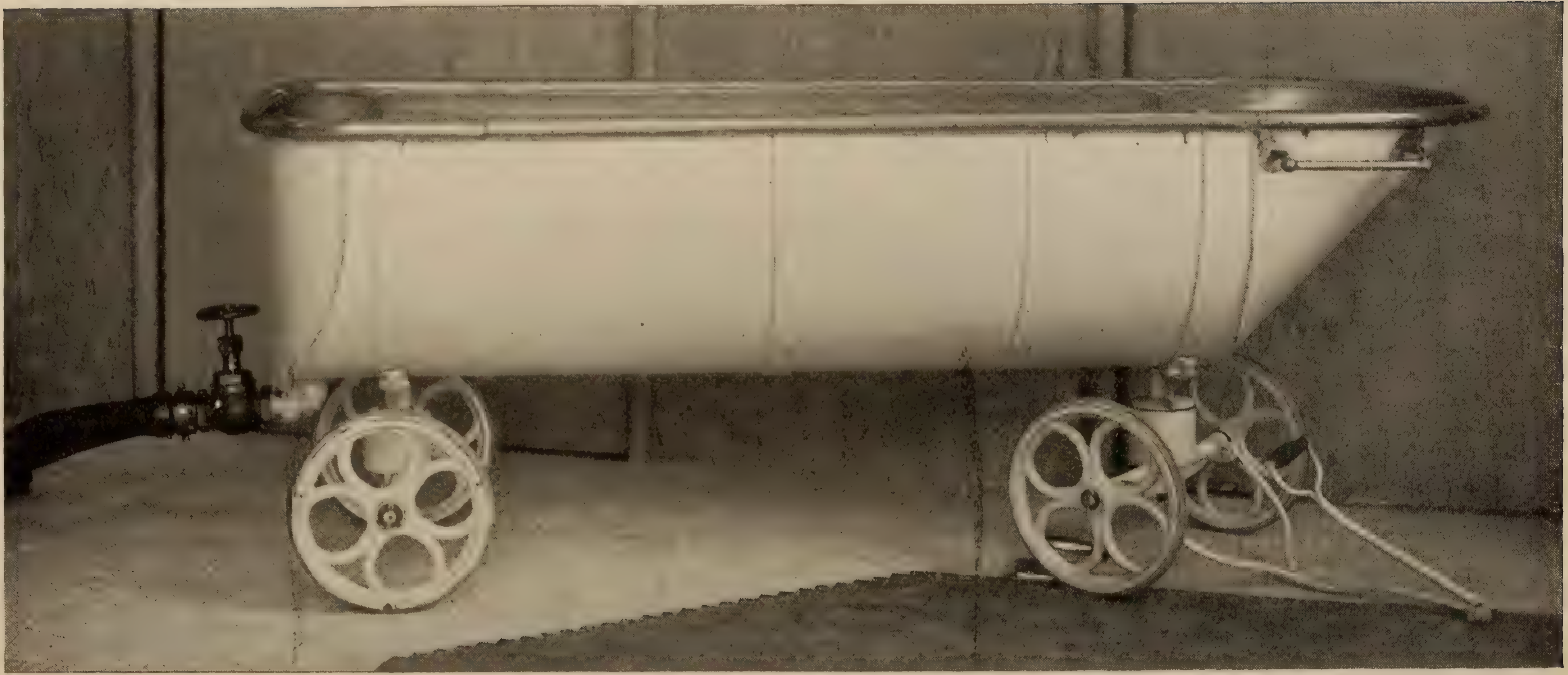


THE PORTABLE BATH TUB.

a half to replace. The person who has met with the accident has learned a lesson, but the experience is not always passed on to the successor in office.

If the table top is iron it will deface and will need to be occasionally re-enameled. This is a small expense where a painter is constantly employed.

There should be a small table for each bedside with some place where the patient may keep his few belongings, as comb, newspaper, etc. A shelf, twelve or fifteen inches below the top, screened upon three sides, is more open to inspection and more easily cleaned than a drawer. If this screen is separated from top and shelf by a space of three-fourths of an inch, corners are avoided and concealment still secured.

Writing tables for nurses will be needed where the work of making up charts, records and diet sheets is to be done in the wards, and an ample shelf beneath to hold the numerous blanks is convenient. Each ward needs a table for washbowl, pitcher, etc., for the use of the doctors on their rounds.

The tables, like the beds, should be shod with wood.

Chairs of hard wood with firm high backs to support the shoulders, meet all the conditions of the ward service. A pad or folded blanket will give added comfort when required. An upholstered chair is not permissible under any circumstances, while the holes in the wood frame of a cane-seated chair furnish a most choice lodgment for bedbugs.

One or two wheel-chairs with rubber tires are desirable for exercising convalescents, and are useful in transporting patients to the bath-room, provided the architect has not made the doors too narrow to allow them to pass. One or two reclining chairs are an added source of comfort if the space be ample; or wicker couches, if a sun-room be attached.

Screens are needed to draw around the bed during special examinations, dressings and baths. A good form of screen consists of three leaves, five and one-half feet high by three feet wide, made of a light frame of oak or other hard wood, with a removable brass rod within the frame at top and bottom, upon which is shirred a curtain of white sheeting. Castors of wood or leather will add ease in handling them. At least six screens will be needed.

Portable bath-tubs are made a necessity by the present method of treating typhoid and other diseases by baths. The tub for this use should be not less than six feet and nine inches in length. A satisfactory tub is of heavy tinned copper, with an outer protection of sheet-steel, and a rim of large brass tubing. This mounted upon an iron truck with rubber-tired wheels eight or ten inches in diameter, is easily rolled, and can be filled and emptied by a hose leading from the bath-room.

The medicine case with glass sides, top and shelves secured by a metal framework, is highly satisfactory, being constantly open to inspection. It should stand upon a table also of glass and iron, having sufficient room for the bottles, graduates and glasses necessary in dispensing medicines.

A plain clock with a large dial should be hung in a conspicuous place in each ward.

In the surgical wards there must be added a bandage case; a good-sized table for cutting bandages and preparing dressings; a portable dressing stand with roomy shelf to hold solution bottles and dishes, pus-basins, instruments, powders, ointments and whatever is required for use at the bedside; also a sterilizer with its proper support. All these should be of glass and iron construction. Experience shows that a full glass top on the sterilizer table soon breaks from heat, but two narrow strips of glass across the table frame, on which the feet of the sterilizer rest, can be used without accident.

An irrigating stand for long-continued irrigations is needed. This is a plain all-iron stand four feet and six inches high, with a top fourteen inches square, and six inches from the floor a shelf twenty inches square. On the top can be placed a pail with the irrigating fluid, while the bottom shelf will hold a pail or small tub for the drainage. Inasmuch as continuous irrigation is required only occasionally, one stand will probably serve the whole hospital.

The room for special examinations attached to the ward for women should be furnished with some form of gynæcological table, an instrument case and instruments, with necessary table for the same; a lamp for night service, a stand for washbowl, a dressing pail, etc.

Utensils. — Bed-pans, sputa-cups and urine mugs are preferably of stone china, and should all be made with well-rounded edges, having every part of the surface visible and easily cleaned. Bed-pans for general use are most satisfactory when made without handle or spout. There are many shapes in bed-pans and every hospital should have a variety.

Urinals and glasses for sending specimens to pathological department should be of clear glass.

Wash-basins of papier-mache are light, unbreakable, and with occasional repainting are very serviceable.

Dressing pails of earthenware are made, but they are expensive.

Enameled iron of various kinds is much used for utensils of all sorts, but the enamel will chip off, bringing to view the black iron which then rusts, and the pails of this ware leave an indelible mark upon a wood floor.

For heaters, water-jugs, cans and bags are used. The jugs are of earthenware and are subject to breakage. Oblong, three-sided copper cans with rounded corners and screw caps attached by chain, are most convenient and cost more, but last indefinitely. A few rubber water-bags are desirable, as they adapt themselves to the parts to which they are applied.

Food Service. — A special diet kitchen is important, as special diets should be prepared by a special cook and away from the whirl and bustle of the great kitchen. It is also an essential factor in the training of nurses. While the main kitchen will be furnished much like the same department in a hotel, the equipment of the special diet kitchen will depend entirely upon the character of the hospital in which it is.

The transportation of food to the wards requires some carrier or car in which the food can be kept hot. If put into heated dishes or boxes in considerable bulk, it will not ordinarily cool perceptibly in transportation. The recent development of a patent fuel makes it possible, without occupying much space, to introduce any amount of heat into a closed car or box. After the hospital service has developed the kinds and quantities of food which ordinarily pass from the kitchen to the wards, a car can be readily designed which will meet all necessary conditions.

Pantry and Serving-Room. — It is to be hoped that the equipment of this room will not discover that it is too small. Here are to be placed the appliances for keeping food hot and tables for serving it, the trays and dishes for patients in beds, a sink for washing dishes and a gas stove.

The food question is always a vexed one, and each hospital must feel its way to the solution of its own problem.

For keeping food hot a table with hot water or steam bath is without question the best, and it should be provided with a vapor pipe to carry off excess of steam. Its size should be carefully proportioned to the size of dishes used, and the quantity of food ordinarily to be placed upon it. For this reason it may be well to leave this particular appliance until after the opening of the hospital, and let it develop by a process of evolution.

Solid porcelain sinks look well, wear well and are easily cleaned, also with careless servants cause breakage.

An ample refrigerator is a necessity. The best is one in which the doors open flush with the sides, and from which the ice-box, shelves and drain pipes are removable, bringing every part in sight, leaving no excuse for neglect in cleaning. It should have two compartments, one for milk and butter only. It also needs a lock, since in most general hospitals convalescent patients pass in and out of the pantry assisting the nurses, and there always are some whose views of " mine and thine " are somewhat vague.

There is no objection to wooden shelves and tables in the serving-room, as their working parts are always in sight, and can be kept clean.

Dining-Room. — The furniture of the ward dining-room should be plain, neat and serviceable. A water filter and cooler usually finds its place here also, and this should be porcelain-lined.

Accessory Rooms. — The linen-room must be furnished with shelves and a few drawers with locks. Here will be kept the supply of linen, blankets, etc., also such smaller articles as pins, thread and bandages, and various reserve supplies.

In the supply-room will be stored the more bulky supplies, as large solution bottles, ointments, flaxseed meal, etc. It may, if space permits, also be utilized for making poultices, sterilizing instruments, etc., and would then require a table, sink and sterilizer.

There must be a clothes closet for storing the personal clothing of patients. Clothing hung on hooks keeps in much better condition that when folded in bundles. Closets eight by ten inches are sufficiently large to hold all the clothing worn by a patient, and these may be made of wood, iron or galvanized wire netting, with or without doors. The netting admits thorough ventilation and fumigation if necessary, but also some dust.

A drying closet with bars where dampened clothing, rubber sheets, etc., may be hung, is required.

Also a broom and mop closet where these articles, with dustcan and similar utensils, can be kept by themselves.

Children's Ward. — If very small children are to be received a special ward should be provided with cribs, small chairs and tables, linen and utensils of suitable size.

Private Patients' Rooms. — More and more the well-to-do and wealthy in times of sickness, are seeking in the hospital the quietness and comfort which are not to be found in the modern hotel or apartment-house. The private patient service will demand separate sanitary and food-serving equipment, while the bedding, linen and china must be of finer quality than the ward use requires.

The bed may be made more æsthetic by some form of ornamentation which is easily kept clean. There should be a substantial bureau with glass, a washstand with its furnishings, a small wardrobe, a commode, one or two tables, all with a neat, smooth style of finish; a reclining or rocking chair and one or two straight chairs (cane seats would be allowable here); a wicker couch if the room is large enough; a sufficient number of rugs, and a waste-basket; also, a push button with cord leading to an electric bell by which a nurse may be summoned.

Accident or Emergency Ward. — Every hospital where acute diseases are treated and which receives patients from its own or other ambulance service, must have a place for the reception of such patients.

Here should be beds, and inasmuch as the patients are usually brought in upon stretchers, beds with head and foot frames which do not come above the mattress will be found most convenient. Of wheel stretchers for the conveyance of patients to the wards there are many forms, but none more convenient and comfortable than that which consists of an open frame of iron pipe, supported on two rubber-tired wheels twenty-four inches in diameter and two legs with rubber tips. The open frame supports the poles of an ordinary canvas stretcher, and permits the patient to hang in the canvas as when carried by the hands, giving a sense of security and comfort not found on the usual flat top construction. There should be several screens such as have been already described; a medicine case; a surgical case for instruments and bandages; an operating table; a nurses' writing table; a table for the various solutions, instruments and dishes; a portable stand with shelves for solution bottles; a work table for making bandages, dressings, etc.; a sterilizer with its proper table; a liberal sink with combination faucet and draining slab, and a washbowl for the use of doctors and nurses.

Its supply-room will be provided with the many things — including crutches, splints and restraining appliances — required in such a service; a linen closet, a bath-tub and water closet are necessities.

If this room is to be used also for surgical out-patient service, a waiting-room with seats will be needed. A useful adjunct is a room with one or two beds, for persons whose condition demands no treatment beyond a few hours of quiet rest.

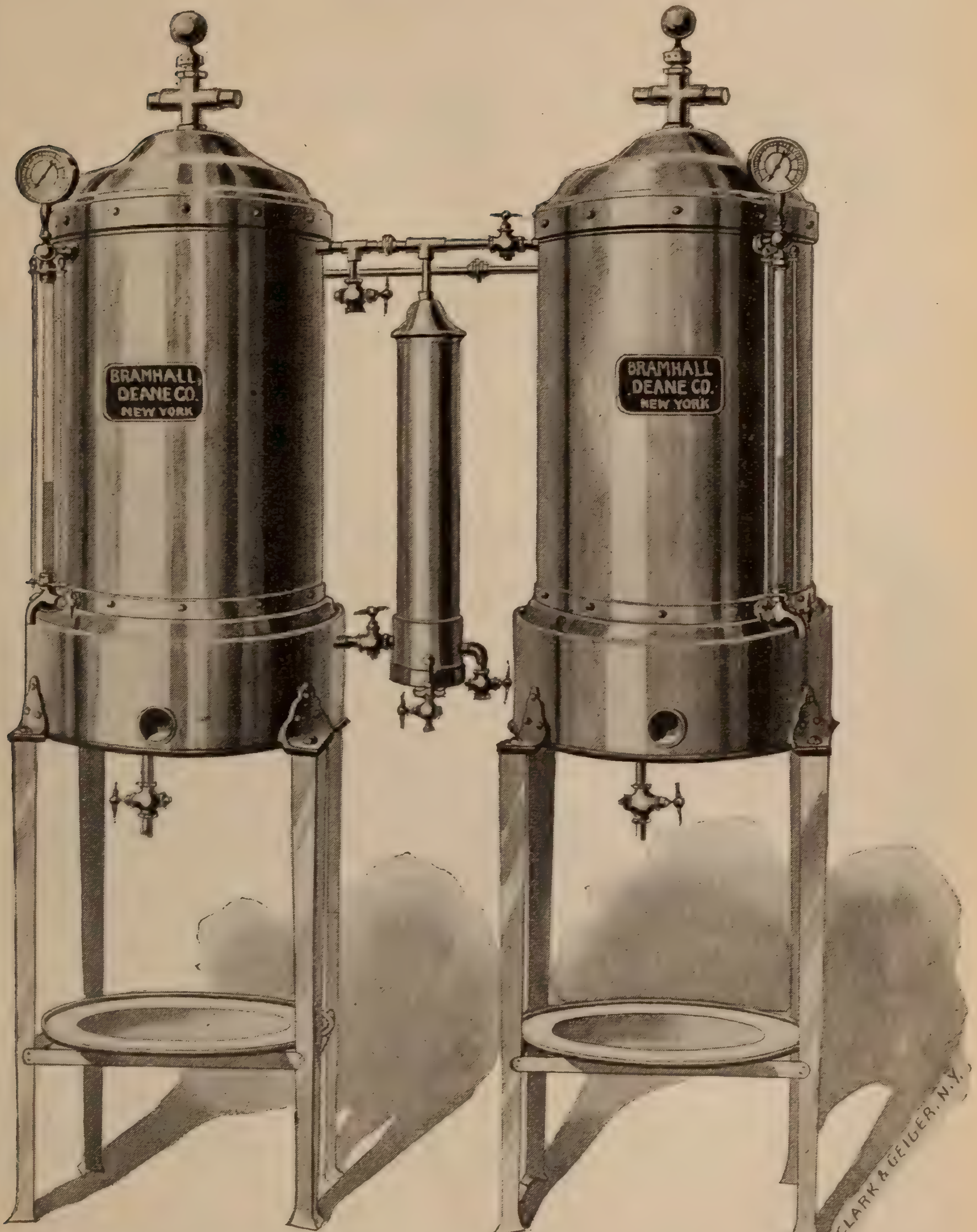
The Isolating Ward. — As this is a place for the prompt removal from the general wards of infectious diseases, it must be strictly separated from the hospital proper, and becomes in itself a miniature hospital. It will therefore require a full equipment of its own. In some central room or closet must be placed all the essential supplies and utensils which are found in other wards.

In this connection arrangements must be made for the disinfection of clothing before being sent to the laundry. It may be accomplished with a bath-tub, or set stone or earthen laundry tubs.

For general disinfection the most common method is the subjection to high temperature either dry or moist. Large jacketed iron cylinders lined with non-corrosive material are very satisfactory. They should be large enough to admit one or two mattresses, and so arranged that live steam can be blown into the articles to be disinfected, superheated, if necessary, by steam in the jacket. Provision should also be made for passing warm

To Illustrate Dr. Fisher's Article on "Hospital Equipment."

Albany Medical Annals, February, 1898.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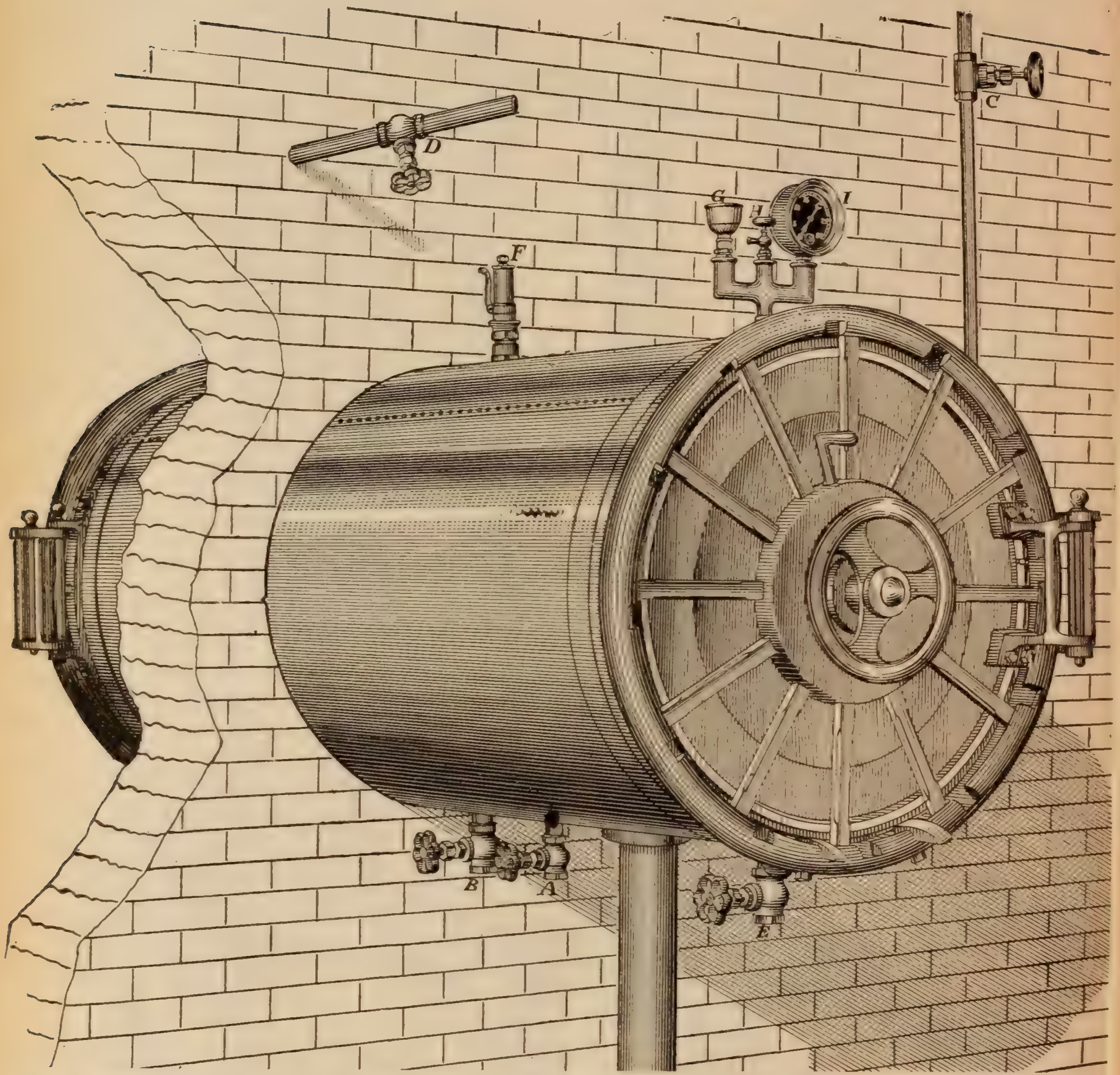
WATER STERILIZERS.

To Illustrate Dr. Fisher's Article on "Hospital Equipment."

Albany Medical Annals, February, 1898.



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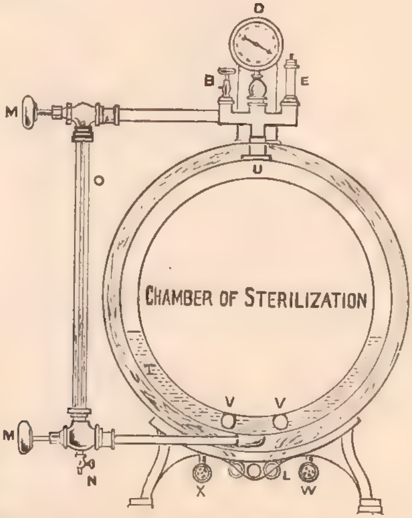
CHAMBER FOR GENERAL DISINFECTION OF CLOTHING, MATTRESSES, ETC.

To Illustrate Dr. Fisher's Article on "Hospital Equipment."

Albany Medical Annals, February, 1898.



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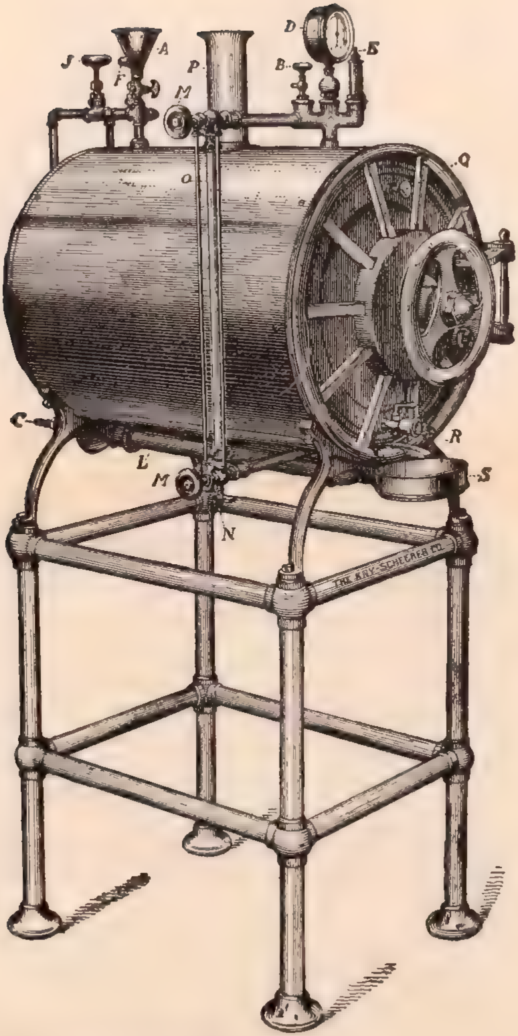

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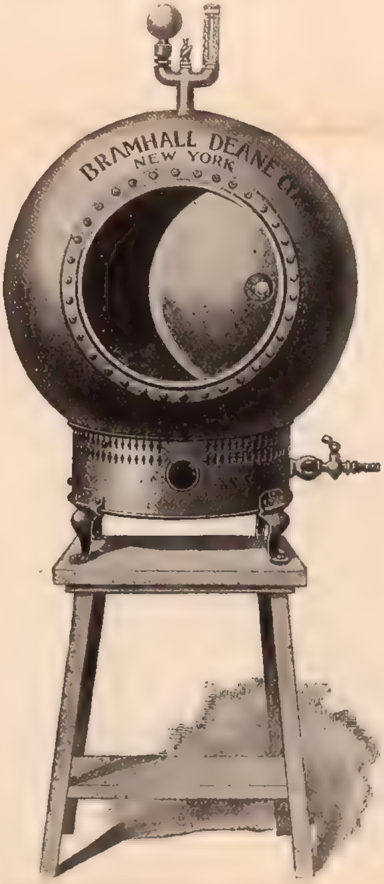

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TWO DIFFERENT FORMS OF DRESSING STERILIZERS.

dry air through the cylinder, in order that clothing, mattresses, etc., may be thoroughly dried. The most serious objection to this treatment is that it causes shrinkage of most fabrics. It is to be hoped that the experiments now being made with Formaldehyde gas will demonstrate that this agent can take the place of the high-temperature process.

The Operating Room. — If the wards and other parts of the hospital have lacked some or many things, the modern operating room will reveal that in its construction and equipment, ideals have been worked out. This is well, for modern science has demonstrated that the first condition of success in surgery is absolute *cleanness.*

Here should be kept ready everything needed for operations of all kinds, and the furniture should be of glass and iron.

Concerning the operating table, there is great diversity of opinion among surgeons. A serviceable table consists of a substantial frame of iron six feet three inches long and eighteen inches wide; the top of two lengthwise sections of glass, their inner edges about one inch apart and depressed about one and one-half inches below their outer edges. This prevents the patient from sliding from side to side. An attachment is easily applied which secures the Trendelenburg and other positions.

Tables will be needed for cleansing solutions; for instrument trays; for sponge basins; for dressings; an instrument sterilizer with proper table; tables or stands with shelves for solution bottles and basins; a deep slop sink, with liberal water supply; a stand with shelves for many reserve stock preparations; an irrigator adjustable to various heights, in which an ordinary dairy thermometer will indicate the temperature of the irrigating fluid.

Accessories to the Operating Room.—In the room for preparation of dressings, the sterilizers will be in size and number according to service required. Most hospitals now use the pressure sterilizers, carrying from five to ten pounds steam pressure. These are operated by steam from boilers or by gas burners, according to taste and convenience.

Water sterilizers should be so placed that the water may be taken through as short a pipe as possible to point of use, experience having shown that it becomes contaminated when conveyed considerable distance.

The other requisites for this room are a bandage case; a stand with shelves for flasks, jars, etc.; a closet or iron cabinet, where may be kept such dressings as should not be exposed to light, and also other supplies and utensils not desirable to expose in the glass case; a large table for preparing dressings; a sink of solid porcelain and ample draining slab of marble.

The instrument room will contain cases for instruments according to space and needs; a stand with shelves for extra dishes; a large table for sorting and laying out instruments.

The sink and marble draining slab for the cleaning of instruments should not be in this room, inasmuch as the moisture and dust resulting from this process are found to be injurious to instruments. They are better placed in some adjoining room, or in connection with the sink of the operating room.

The etherizing room will require a case for the anæsthetics and the appliances for their administration; also those medicines and instruments needed for emergencies of anæsthetization. It is better to omit the etherizing table and use instead the wheel stretcher already described, on which the patient has been brought from the ward. At least two such stretchers will be required for this department.

The lavatory needs four or five washbowls, and an ample shelf of marble with back of the same for the various basins of cleansing solutions. Appliances are made by which the water for the bowls can be controlled by the foot. These have found favor with many surgeons, but it is a fair question if the difficulty of keeping the entire mechanism clean does not offset the convenience of it.

The surgeons' dressing-room should have lockers for personal clothing, a washbowl, mirror and bath-mat; and if construction permits, a bath-tub would be a desirable addition.

In the consulting-room must be chairs, and a writing table on which may be placed the records of the cases to be operated upon. Here also may be a closet containing the microscope and such pathological accessories as are needed for the operating-room service.

Somewhere in the building away from the operating room, perhaps in the basement, should be found a large deep sink or bath-tub for cleansing the sheets and other things constantly in use, and in this connection some proper room for drying the same.

Certain electrical apparatus is necessary; the surgical instruments must be in their cases, and such medicines and appliances in the pharmacy as the medical board may determine, must be on hand before the first patient is received.

Some method of prompt communication should be established between the superintendent's office and all important departments. In a large hospital the telephone is best, while speaking tubes may be satisfactory in a small and compact building.

Thus far mention has been made only of those universal lines of supply which belong to all hospitals. It will at once be apparent that the detailed study of equipment should be carried on co-ordinately with the plans for construction; also, that considerable time must elapse between the completion of the buildings and the opening for service, lest errors in building and hasty furnishing leave points of friction in the working machinery, and large expense be incurred to correct first mistakes.

Besides these essentials, the large hospitals of cities require the ambulance service and out-patient department; and where the educational factor of hospital work is entered upon, the apparatus for pathological research and the training school for nurses with its home, become large additional features which it is beyond the limits of this paper to discuss.

70TH STREET AND MADISON AVENUE, NEW YORK.

For the ANNALS.

THE MEDICAL SERVICE OF HOSPITALS.

BY HENRY M. HURD, M. D.,
Superintendent, The Johns Hopkins Hospital.

In treating of the medical service of hospitals I understand that I am to give an individual opinion of that organization of medical service which seems to me best calculated to advance the primary objects of hospital construction, viz., the care of the sick and the increase of medical knowledge. Each object is equally important, and one cannot exist without the other. The more medical knowledge is increased the better care will be given to the sick in every case; on the other hand, the higher the ideal which is established for the care of the sick the surer will be the resulting addition to medical knowledge.

VISITING STAFF.

In American hospitals medical service is now in a state of transition, with the prospect that in the end a better system than exists anywhere at present will be evolved. Originally based upon English usage, hospital appointments were made for life, or until disability from old age or disease forced the retirement of the incumbent. The number of men who were fitted to fill the positions was necessarily small, and the fathers in the medical profession when our country was new occupied these positions of honor and duty without much question on the part of any one as to their right to hold them indefinitely. When, however, the profession of medicine began to be crowded, and there were not enough hospital appointments to supply all who desired them, a system of limited service obtained, with a divided or alternating responsibility, and such has continued the custom in most of the Atlantic cities. These hospital appointments have generally been made from among the representative men of the medical profession, whose services have been rendered gratuitously and faithfully in a manner most creditable to them. In some of the newer cities, however, positions upon the visiting staff of a hospital have been regarded as the rewards of political service, and changes have been made with changes of political parties, but fortunately such misconceptions of the rights of the sick and suffering to proper and skilled care have not been common. Within a few years past a reversion to the original status of a member of the hospital visiting staff has developed, and in an increasing number of hospitals permanent heads of departments of hospital medical service have been appointed. Such permanent appointments have much to commend them. A permanent visiting surgeon with a continuous service is able to give the department of surgery a definite policy, with a uniformity of methods, results and records. There is also a corresponding economy in the use of supplies and in the purchase of instruments and apparatus. The necessity of meeting the wishes of many men with many minds, and of supplying the varying requirements of visiting surgeons who may change several times each year, cannot but be a source of waste and an increased expense.

The same is equally true of all other co-ordinate branches of hospital service. Hence in my opinion a permanent head of each department is desirable. In addition to this, it is equally desirable that these men be salaried, so that the hospital may avail itself of their services as a matter of right, and not alone through courtesy. As members of a visiting staff, then, I would recommend permanent salaried officers of the highest medical attainments.

RESIDENT STAFF.

One member of the resident staff should be a permanent officer, with a term of service for life or during good behavior. I refer to the superintendent and admitting physician. He should have charge of all the physical affairs of the hospital, under the authority of the trustees, and should serve as a means of communication between them and every department of service. In addition, he should be the admitting and discharging physician, and should regulate the movement of hospital population. His duties as an administrative officer do not concern us here, but the importance of placing in his hands the whole matter of the admission and discharge of patients cannot be too strongly emphasized. In no way except by placing the whole question of the admission of patients in the hands of a person who is continuously in office, and whose duty it is to carry out scrupulously, consistently and uniformly the rules established by the trustees or contained in the charter, can the hospital be protected from the admission of patients who are not true objects of charity. It is undeniable that many of the abuses of medical charity so feelingly detailed in medical journals have their origin in the zeal of young medical men, who see an interesting case in the applicant for charity, but fail to see that charity ought not to be exercised where the patient is fully able to pay for treatment. The same is equally true of the discharge of patients. Through the inexperience of the medical officer the most shrinking, homeless and necessitous patient may be sent out prematurely, and the voluble, brazen dead-beat may be relieved far beyond the demands of his disease or the limits of charity. The admitting physician should receive the fullest information concerning patients from the members of the staff, but the ultimate decision as to admission and discharge should rest with him.

The resident physician and resident surgeon should, if possible, be retained for a period much beyond what is customary in hospitals at present, where most of the resident officers change outright every year. It too often happens in hospitals that the resident medical officer, who came fresh from his medical school to the hospital, must by an inexorable law of succession yield his place to another equally inexperienced physician when he has learned to be useful. The position of resident physician or surgeon should be held for at least two years, and preferably for three, if a competent man can be induced to remain for that length of time. If requisite to retain a desirable and useful man, a moderate salary should be paid. In the appointment of internes the governing principle should be to secure the young man who can do the most to advance the medical work of the hospital, and not to seek out the inexperienced man who stands most in need of training. To the resident staff should be added bacteriologists, pathologists and clinical clerks sufficient in number to do all branches of medical work thoroughly and efficiently. The greater proportion of hospitals are insufficiently supplied with medical officers, and as a result of overwork many able physicians acquire superficial methods of work which cling to them during the remainder of their professional lives. If there is any argument for undertaking the work at all, the argument for doing every part of the work as well as it can possibly be done is overwhelmingly strong. The medical staff, therefore, of every hospital should be made large enough and strong enough to meet every philanthropic and scientific requirement.

LABORATORY WORK.

The time has come when every hospital should possess, as an integral part of its equipment, scientific laboratories for the prosecution of medical studies — not alone to add to the common stock of medical knowledge, valuable as that is in itself, but primarily to add precision to medical diagnosis and to furnish grounds for a proper treatment of disease. First in utility unquestionably is the clinical laboratory, where all the products of disease can be examined. Here the presence of tuberculosis may be demonstrated by the detection of the tubercle bacillus; typhoid fever by the diazo-reaction, or the Widal test, or the bacillus typhosis;

malarial fever by the demonstration of the plasmodium malariæ in the blood; amœbic dysentery by the discovery of the amœba; diphtheria by the Klebs-Loeffler bacillus, or tonsilitis by one of the streptococci. Here the stomach contents may be examined, the true character of ascitic fluids determined, and the urine, fæces and other body fluids analyzed. Here also the blood examinations by the Ehrlich and other methods can be conducted. Each clinical laboratory should have its thermostat and all needful apparatus for bacteriological work; also its polariscope and other essential instruments of precision.

Next in importance I would place the pathological laboratory, with its facilities for the study of tumors and morbid specimens, and the autopsy-room, for the examination and study of the final lesions of fatal disease. Nothing tends to develop accuracy of observation and precision in diagnosis as the certainty that all findings may be reviewed at the autopsy. The pathological laboratory, equally with the clinical laboratory, gives a definiteness to medical work. It is also important that a surgical laboratory be an adjunct of all surgical operating rooms, not only to determine what has been done, but to cast light upon diseased processes *intra vitam* and before or during surgical operations.

MEDICAL HISTORIES.

Much of the medical work of hospitals fails of its highest results in adding to the sum of medical knowledge by reason of imperfect histories. Every history of a patient's disease should contain a full and painstaking account of his condition prior to his admission to the hospital. Inherited tendencies to disease should be carefully noted. Previous attacks of disease, habits of living, occupations, places of residence, exposures to unhealthful surroundings, addictions to alcoholics, opium or immorality; these and many other similar facts should be scrupulously inquired into. The state of the patient upon his admission should be painstakingly written down, and daily notes of his subjective and objective symptoms should invariably follow. If a surgical operation is done it should be accurately described, and the pathological findings in the tissue or tumor removed should be recorded, and above all, the microscopic sections should be preserved in such a manner as to be easily accessible for future study. The termination of the disease should similarly be made a matter of record, and in the event of death a full protocol of the findings at the autopsy. These histories should be subsequently bound in permanent form and indexed, so that they may be referred to when required for study. There should also be cross-references upon index cards, so that groups of cases or interesting complications may be studied together. A long experience in these matters has convinced me that a registrar to keep all of these records in hand, and to ensure their completeness and accuracy, is an essential officer in every hospital.

In conclusion, I would urge that as far as possible every general hospital be used to assist in the work of medical teaching. Nothing is so well calculated to keep all parts of hospital machinery bright as the presence of active minds eager for the acquisition of knowledge. The medical service is better; all persons concerned in the work are more alert; newer methods become more speedily popular, and antiquated methods sooner pass away. In the present era of bedside instruction, good medical schools are wholly dependent upon hospitals, and medical teachers owe it as a reciprocal duty to give their best energies to perfecting the medical service of hospitals. The hospital should give every facility for instruction to the medical school, and the school should make a conscientious and fruitful use of the opportunities there presented.

BALTIMORE, MD.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D.

BULLETIN OF MEDICAL LEGISLATION.

Introduced.	Number.	TITLE.	Presented by	Referred to Committee on	Date of hearing.	Date of action. (passed or defeated).	Amended.	Signed by Governor.
Jan. 5, '98	S 2	An Act, " Providing for an investigation and report on the Adirondack Water Supply."	Senator Brush.	Read twice. Finance.				
Jan. 5, '98	S. 3	An Act, " To provide for the treatment of all persons diseased, incompetent or dangerous from the use of alcoholic stimulants, opiates, narcotics or drugs of any description."	Sen. Brush.	Read twice. Public Health.				
Jan. 5, '98	S. 5	An Act, " To amend previous laws relating to appointment of members of, and duties of Health Board of Greater New York."	Sen. Brush.	Read twice. Cities.				
Jan. 13, '98	A. 79		Mr. Laimbeer.	Read once. Cities.				
Jan. 5, '98	S. 12	An Act, " To provide for the establishment by the city of New York of a farm colony for detention, reformatories and instruction of men convicted of vagrancy or habitual drunkenness."	Sen. Pavey.	Read twice. Affairs of cities.				
Jan. 14, '98	A. 185		Mr. Laimbeer.	Read once. Cities.				
Jan. 5, '98	S. 27	An Act, " To amend Laws of 1897, relating to Board of Pharmacy and druggists of Greater New York."	Sen. Guy.	Read twice. Cities.				
Jan. 5, '98	S. 52	An Act, " To amend sections 1081 and 1127 of civil procedure exempting practicing physicians, surgeons, surgeon dentists and licensed pharmacists, actively engaged, from jury duty."	Sen. Sullivan.	Read twice. Codes.				
Jan. 13, '98	S. 79	An Act, " To provide compensation for animals killed in New York State under Tuberculosis law."	Sen. Ford.	Read twice. Cities.				

BULLETIN OF MEDICAL LEGISLATION — CONTINUED.

Introduced.	Number	TITLE.	Presented by	Referred to Committee on	Date of hearing.	Date of action. (passed or (defeated.	Amended.	"Signed by Governor.
Jan. 13, '98	S. 89	An Act, "To amend the public health law in relation to veterinary surgeons."	Sen. Wray.	Read twice. Public health.				
Jan. 13, '98	S. 90	An Act, "To provide for proper sanitation, ventilation and protection from fires of school houses and other public buildings."	Sen. Wray.	Read twice. Judiciary.				
Jan. 13, '98	S. 91	An Act, "Amending previous laws relating to provision of funds for the several charitable institutions of Greater New York."	Sen Wray.	Read twice. Affairs of cities.				
Jan. 13, '98	A. 30	An Act, "To amend previous laws in relation to sale of liquors by licensed pharmacists."	Mr. Hill.	Read twice. Excise.				
Jan. 13, 98	A. 74	An Act, "To prevent the sale and manufacture of cigarettes."	Mr. Hoffman.	Read once. Public health.				
Jan. 13, '98	A. 88	An Act, "To amend the penal code relating to frauds in the purchase of dairy products."	Mr. Laughlin.	Read once. Codes.				
Jan 13, '98	A. 128	An Act, "In relation to St. Francis and St. Joseph Hospitals, New York."	Mr. H[illegible].	Read once. Cities.				
Jan. 17, '98	S. 126		Sen. Foley.	Read twice. Cities.				
Jan. 14, '98	A. 166	An Act, "To provide for the better protection of the public health, in relation to the manufacture and sale of cigarettes."	Mr. Fritz.	Read once. Public health.				
Jan. 17, '98	S. 114	An Act, "To procure proper sanitary conditions and proper ventilation of public buildings and school houses."	Sen. Burns.	Read twice. Pub. education.				

S. Senate. A. Assembly.

VOL. XIX MARCH, 1898 NO. 3

ALBANY MEDICAL ANNALS

Original Communications.

TUBERCULOSIS OF THE STOMACH,*

WITH A REPORT OF A CASE OF MULTIPLE TUBERCULOUS ULCERS OF THAT ORGAN.

BY GEORGE BLUMER, M. D.

From the Bender Hygienic Laboratory, Albany, N. Y.

Though there have been a number of cases of tuberculosis of the stomach published within the last few years, the well-authenticated cases in which not only a microscopic examination, but also the demonstration of the tubercle bacillus, has been made, are still relatively scarce. The incidence of stomach implication in tuberculosis has doubtless been greatly exaggerated by some of the older writers, Rilliet and Barthez for example, who claimed to have found stomach ulceration in 21 out of 141 cases of tuberculosis. More recent statistics show the number of cases to be much smaller, Dürck having seen only four cases in 900 autopsies, and Letulle only having observed the condition once in 108 autopsies on tuberculous subjects. In experimental work the condition seems to be more frequent, as Orth, in his work on ingestion tuberculosis, observed tuberculous stomach ulcer in one out of seven guinea pigs.

In looking over the available literature we have been able to collect only thirty reliable cases, and in many of these there was of necessity no examination for tubercle bacilli, as the observations were made before the discovery of this organism. It is hardly necessary to state that the cases are all secondary to some preexisting tuberculous lesion elsewhere. Eppinger, indeed, seems to regard his cases as perhaps primary, but his description hardly supports this view.

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* Read before the Albany County Medical Society, February 16, 1898.

The cases naturally group themselves under one of three heads: (1) Cases of miliary tuberculosis of the stomach; (2) cases where single ulcerations existed; (3) cases of multiple ulceration.

The cases of pure miliary tuberculosis are quite rare, the most satisfactory being that described by Wilms. One of Kühl's cases and one described by Barth belong to this category, and Letulle's case in all probability originated as one of miliary tubercle of the stomach wall.

Single ulcers, in which both careful histological and bacteriological examinations were made, are reported by Musser and Dürck. Habershon reports a case in which no histological examination was made, but many tubercle bacilli were found in the scrapings from the caseous floor of the ulcer. Cases of single ulcer in which a satisfactory histological examination was made, but in which there was no examination for tubercle bacilli, are reported by Pozzi, Hattute, Letorey, Litten, and others. The single ulcers reported by Beadles and Lorey must be regarded as doubtful, as these authors give no satisfactory description of the microscopical appearances. The case of Pozzi has been included by Hamilton in this doubtful class of cases, but as the microscopic examination in this case was made by so eminent an authority as Cornil, the case may be considered with those in which a full microscopic description was given.

Multiple ulcers identified by the strictest requirements have been described by Coats, Letulle and Hamilton. Other cases in which the microscopical examination is complete, but in which no examination for tubercle bacilli was made, are recorded by Barbacci, Mathieu, and others.

Many cases are found in the literature in which the description of the ulcer is so vague that no definite conclusion as to its nature can be arrived at. To this group belong the cases of Chvostek, Lange, Labadie-Lagrave, Hanau, Paulicki, Barlow, and Hebb (second case).

Before discussing certain points in connection with the origin of the ulcers, I wish to report a new case.

The case occurred in the private practice of Dr. George E. Gorham, of Albany, N. Y., for whom the autopsy was made.

Mrs. S., a woman of about 50 years of age, died after a somewhat protracted illness, having the clinical appearance of typhoid fever. During life she had at no time definite stomach symptoms of any kind. The autopsy was made ten hours after death. The main lesions found were an old caseous area at the apex of the right lung, which had softened at its lower part, general miliary tuberculosis, tuberculous ulcers of the stomach and ileum, tuberculosis of the kidneys and tuberculosis of the aorta.

The following description of the stomach is abstracted from the autopsy protocol:

"The stomach is much dilated, and contains dark greenish material. The walls are thin, the mucous membrane is thin and pale. Near the greater curvature, over the mid-portion of the organ, are three or four small circular ulcerations; they are from four to six millimeters in diameter, and have slightly raised edges, a little yellower in color than the surrounding mucous membrane. Their bases are smooth and clean. The ulcers are shallow, and do not apparently pass through the mucosa. Over other parts of the middle zone of the stomach are seen beneath the mucosa pin-head sized yellow nodules. Their yellow color is perhaps apparent, and due to the bile-staining of the overlying mucosa.

"*Microscopic.* — The mucous membrane of the organ is atrophied, this condition being much more marked in some portions than in others. The gland structures seem smaller than normal, many of the gland cells having a shrunken appearance. Aside from the tubercular lesions, two other changes are to be seen in the mucosa: (1) An increase in the connective tissue between the glands; (2) the occurrence of collections of round cells in numerous places. The increase in connective tissue occurs in the form of a fairly diffuse thickening of the normal interglandular tissue by fully formed fibrous tissue.

"The cellular collections are quite numerous, as many as three or four being at times present in the same section. These collections occur in the mucosa alone, involving its whole thickness, and are almost invariably in intimate relation with diseased vessels. The infiltrating cells are for the most part of the ordinary lymphoid type, and are arranged either as quite definite, almost round nodules, or more commonly simply as an irregular interglandular infiltration. In some instances the glandular structures are still to be made out between the cells, but very often they have completely disappeared. The vessels supplying these areas are situated at the junction of the mucosa with the muscularis mucosæ; they invariably show great thickening of their coats with partial or complete obliteration of their lumen. This thickening is due to the presence in the vessel wall of a pink-staining refractive material, which strongly resembles amyloid, but which does not give the chemical reactions of this substance, and is presumably hyaline. These nodules do not at all resemble the tubercular lesions, and no tubercle bacilli are to be made out in them.

" The tubercular lesions exist either as miliary tubercles or as superficial ulcerations. The miliary tubercles are situated beneath the mucous membrane in the submucosa. They are only seen in the neighborhood of the ulcerations, are small, and present the usual appearances of tubercle nodules. They are made up of epithelioid and lymphoid cells, the former predominating in the centre, the latter in the periphery of the nodules. An occasional giant cell of the Langhans type is to be seen in them. In sections stained with carbo-fuchsin a few tubercle bacilli can be made out, either in the giant cells or in the body of the tubercle nodules.

" The ulcerations are seen to be confined to the mucosa. They are moderately shallow, the deepest not extending through more than half the depth of this coat. The tissues around the ulcers can be divided into three zones: A very narrow internal zone, corresponding to the sides and floor of the ulcer, and made up of necrotic material containing a few nuclear fragments; a middle zone, composed almost entirely of epithelioid cells; and an outer zone of lymphoid cells. In the zone of epithelioid cells an occasional giant cell is to be made out. In some places, where the tubercular process does not extend entirely through the mucosa, the vessels just beneath the tubercular infiltration show considerable thickening of their walls. No thrombi were seen in the vessels in the immediate neighborhood of the tubercular areas. On staining sections with carbo-fuchsin, very large numbers of tubercle bacilli could be made out in the cellular areas forming the walls of the ulcers, particularly in the zone of epithelioid cells. The bacilli often occurred in the cells, at times between them;

usually they were evenly distributed through the section, but in one or two places they were massed together in lines extending from the surface to the base of the ulcer. In one instance such a line seemed to correspond to the remains of a gastric tubule, and the appearance suggested that the bacilli were situated in the remains of the gland cavity."

The question which has always aroused most interest in connection with tuberculosis of the stomach has been the great immunity of the organ to the tuberculous process. Two main hypotheses have been brought forward to account for this: First, the antagonistic action of the gastric juice, and secondly, the absence of definite lymphatic structures from the stomach. With regard to the action of the gastric juice toward the tubercle bacilli, it may be stated that the experiments of Wesener, of Falk, and of Straus and Wurtz have all shown that the gastric juice acts very slowly upon this bacillus. The experiments of Falk and Wesener were made by introducing tuberculous material into an artificial gastric juice and leaving it there for some hours, after which it was inoculated into animals and shown not to have lost its virulence. The experiments of Straus and Wurtz were made by subjecting pure cultures of the tubercle bacillus (containing spores?) to the action of the gastric juice of the dog. These observers showed that in some instances the bacilli retained their virulence after an exposure of 18 hours. It can easily be understood that in these latter experiments the bacilli were in much more unfavorable surroundings than they would be under natural circumstances, where the gastric juice would be diluted by admixture with food, and the bacilli protected by the substances containing them. It can be conceived that under normal conditions the bacilli, though not killed by the gastric juice in their passage through the stomach with the food, could be inhibited from developing in that organ itself, on account of their frequent, though intermittent, exposure to the secretions. Some recent writers seem to infer that because the bacilli are capable of resisting the action of stomach juice for some time, they are able to develop even in a healthy gastric mucous membrane; they do not seem to take into account that the bacilli might be subjected to repeated exposure before they could gain a foothold. In connection with this it may be asked whether in any of the reported cases lesions of the stomach were present such as would decrease or entirely suppress the secretion of gastric juice. In our case an undoubted atrophy of the mucosa was present, and in other reported cases the description leaves no doubt that chronic gastritis existed, as well as the tubercular ulceration. Lebert has asserted that catarrhal affections of the stomach exist in one-fifth of the patients sufferings from tuberculosis. In all these conditions the amount of free hydrochloric acid may be diminished or entirely absent, and, as Straus has shown, the action of the stomach juice on the bacillus is due to its acidity, and not to any digestive action, for a simple watery solution of hydrochloric acid of the same strength as stomach juice has the same effect.

With regard to the absence of lymphoid apparatus in the stomach as protecting against attacks of the tubercle bacillus, it may be said that, though many authors put this theory forward, on account of the fact that in the intestine the lymphoid apparatus is attacked first, none of them bring any definite evidence either for or against it. In the case just reported there were present in the mucosa many collections of cells of a lymphoid type, presumably corresponding to similar collections observed by other authors, Dobrowolski, for instance, in connection with chronic gastritis; in no instance were any tubercle bacilli found in such cellular collections, nor was there the slightest histological evidence of tubercular invasion.

There remains to be considered the connection of certain of these ulcers with disturbances of the blood supply.

It is assumed that in cases of miliary tuberculosis of the stomach the blood is the carrier of the infection to the stomach, as to the other organs, but besides these cases of certain blood infection there are others, particularly cases of multiple superficial ulcerations, which have been assumed to have an origin in disturbances of the circulation. Eppinger, in reporting his cases, suggests the possibility of their relation to the ordinary hemorrhagic erosions of the stomach, and Hamilton, in her paper, again brings forward this suggestion. According to this conception the erosions would act by causing a lesion upon which the tubercle bacillus could become grafted. That such a sequence of events is possible as the result of an injury to the mucosa is proved by the case of Breus. The case was that of an individual with chronic tuberculosis of the lungs, who swallowed a corrosive alk[illegible] th suicidal intent. He recovered from the effects of the poison, but at his death from tuberculosis, four weeks later, numerous ulcers were found in the contracted stomach, in the margins of which definite tubercles containing giant cells were found. Besides hemorrhagic erosions, it is conceivable that other circulatory disturbances might give rise to similar predisposing conditions. Hanau suggests an embolic origin, and in our case there was present in places in the vessels beneath the tubercular ulcers a sufficient contraction of the lumen of the blood vessels to considerably decrease the blood supply, though this change might have followed and not preceded the tuberculous process.

The larger single ulcers would not seem, as a rule, to originate in the same way as the multiple ones. A few are evidently due to extension of the process from an adherent tuberculous lymph gland external to the organ; others are, perhaps, as Dürck believes, secondary to a tuberculous process in the serous coat, and still others may be due, as Klebs suggests, to the inoculation of tubercle bacilli into a simple ulcer. As simple ulcer is not uncommon in tubercular subjects, and as it has already been shown that such inoculation may occur after injury, it seems not at all unlikely that this is sometimes the case.

The following conclusions may be formulated with regard to the factors favoring the development of tubercular stomach ulcers:

1. The acidity of the gastric juice as a factor in preventing the action of the tubercle bacillus on the stomach mucosa has been largely over-estimated by the older writers, but perhaps under-estimated in recent years. Whilst under healthy conditions of the mucous membrane it is probably sufficient to prevent the development of the tubercle bacillus, it is probably insufficient where a local point of lessened resistance occurs.

2. There is no proof that the lack of lymphoid material in the gastric mucosa bears any relation to the rarity of gastric tuberculosis.

3. In multiple tubercular ulceration of the stomach vascular disturbance either in the form of hemorrhagic erosions or of some factor interfering with the blood supply of a part of the mucosa in all probability plays an important rôle. This probably acts

by creating an area of lessened resistance, and as has been shown, such an area is liable to tuberculous invasion.

4. Large single tuberculous ulcers are probably due to direct extension from tuberculous lesions external to the stomach, to extension from the serous coat of the organ, or to the inoculation of tuberculous material on a pre-existing simple ulcer.

A table of the reported cases of tuberculous ulcer is appended. Besides the cases included in this table, there are five reported by Przewosky, but the original article could not be obtained, and the abstracts did not give much detail. Dürck speaks of the cases as if tubercle bacilli had been found in the ulcers, and Wilms mentions that most of the ulcers were single and situated near the pylorus. The case of Serafini likewise was not obtainable.

An analysis of the cases contained in the table brings out the following figures:

Relation of the ulcers to sex:

Cases in which sex is mentioned	18
Male	14
Female	4
	18

Relation of the ulcers to age:

Cases in which age is mentioned 19

2 cases occurred between 5 - 10 years.
4 cases occurred between 10 - 20 years.
1 case occurred between 20 - 30 years.
6 cases occurred between 30 - 40 years.
3 cases occurred between 40 - 50 years.
3 cases occurred between 50 - 60 years.

19

Situation of ulcers:

Cases in which situation of ulcers is mentioned	18
Pyloric end	4
Cardiac end	1
Greater curvature	3
Lesser curvature	6
Distribution over stomach in general	4
	18

Number of ulcers:

Number of cases in which number of ulcers is mentioned	24
Single	12
Multiple	12
	24

The character of the ulcers was so diverse that it can best be made out by referring to the individual cases.

14 Jay Street.

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TABLE OF CASES OF TUBERCULOUS ULCER OF THE STOMACH.

Name of observer.	Number of ulcers.	Situation of ulcer.	Character.	Histological.	Tubercle bacilli.	Sex.	Age.
Musser.	One.	Lesser curvature 1½ in. from pylorus.	3 in. x 1½ in. oval - floor cribriform extends at places to perit. coat. Tubercles in floor.	Usual appearance of tuberculous tissue.	Present.	Male.	44
Dürck.	One.	Lesser curvature.	Size of 5 mark piece.	Not mentioned.	Large numbers in sections	Child.	10
Habershon.	One.	Middle of lesser curvature, post. surface.	Small, shallow, size of 3 penny piece, raised edges - caseous floor, perfectly circular.	Not mentioned.	Large numbers in scrapings from floor.	Male.	35
Pozzi.	One.	Not mentioned	Circular 1½ c. m. in diameter—edges undermined.	Stated to be tubercular by Cornil.	Not mentioned.	Male.	39
Litten.	One.	Anterior wall near lesser curvature.	Elliptical, 4.2 x 3.3 c. m., long diameter across lesser curva. Wall sharp in places swollen and hem. Tubercles to be made out on floor. Reaches to mus coat.	Typical tubercles with giant cells.	Not mentioned.	Male.	30
Letorey.	One.	Near pylorus.	Diffuse ulceration.	Typical tubercular lesions.	Not mentioned.		
Gille-Brechemin.	One.	Not mentioned.	Size of 50 centime piece. Edges prominent. Base caseous.	Caseous tubercular nodules (Cabourin).	Not mentioned.	Male.	18
Hattute.	One.	Pylorus.	Surrounds pylorus as a hard ring: completely occluding orifice. M. M. destroyed in place. Ring made up of masses of granulations.	Elements of tubercle.	Not mentioned.	Male.	47
Cazin.	One.	Near cardia and lesser curv., post surface.	Almost circular, size of 20 centime piece—walls undermined. Tubercles on floor. Base reaches mus coat	Tubercles with giant cells.	Not mentioned.	Female.	10½
Bignon.	One.	Greater curvature.	Sharp, circular, size of 25 centime piece: one yellow tubercle beneath mucous membrane.	Tubercular nodules.	Not mentioned.	Male.	6½
Hebb.	One.	Lesser curvature 1½ in. from œsophagus.	Circular diam. 1¼ in. sharply defined, overhanging edges - indurated base. Tubercles on the floor.	Tubercles with giant cells.	Not mentioned.	Male.	40
Lava.	One.	Pylorus.	Not mentioned.	Tubercles with giant cells.	Not mentioned.	?	?
Coats.	A number.	Not mentioned.	Superficial overhanging edges which are not very prominent granular base. Tubercles on peritoneal surface	Typical tuberculosis.	Many tubercle bacilli.	?	?
Lettulle.	Ten.	Not mentioned.	In form of small tumors size of nuts; ulcerated at surface.	Caseous tubercles with giant cells, submucous origin.	A few tuber. bacilli in.	?	?

Hamilton, Case 1.	115–120.	Mostly on ant. aspect nr. greater curvature.	Round in shape—smaller than a cent piece—edges rounded, thickened, smooth and undermined.	Epithelioid and lymphoid cells, necrosis — no giant cells.	**A few tub. bacilli.**	**Female.**	30
Case 2.	70-75.	Along greater curvature.	Small – edges worm eaten. Bases irregular and in places covered by granulations extending only partly through mucosa.	Infiltration with epith. and lymph. cells. Necrosis. One typical tubercle.	Many tubercle bacilli.	Male.	50
Case 3.	Two.	Bet. pylorus and cardia on post. wall nr. lesser curvature and in middle of lesser curvature.	Irregularly oval — edges raised, undermined, congested. Floor irregular. Tubercles (?) on floor.	Caseous tubercles with giant cells.	Many tubercle bacilli.	Female.	11
Breus.	Numerous.	Along curvature in neighborhood of fundus and pylorus.	Sharp, hard edges.	Tubercles with giant cells.	Not mentioned.	Male.	21
Talamon.	Seven.	Two at cardia. Three along greater curv. Two at pylorus.	Largest near cardia. Largest round and size of 5 sou piece. One almond sized and oval—edges undermined, prominent. Base gray—do not seem to extend beyond mucosa. Ulcers on lesser curv. deeper, diam. 5-6 m. m.	Tubercular; full and good account given.	Not mentioned.	Female.	4½
Eppinger, Case 1.	Many.	Along lesser curv. to pylorus and also on anterior and posterior walls.	Hempseed size to those having Diam. of 1.5 c. m. Wall-like, pale, hard edges, which overhang — deep, yellow colored granular base — Do not extend beyond superficial mucosa.	Typical tubercles with giant cells.	Not mentioned.	Male.	30
Case 2.	Numerous.	At cardiac and pyloric ends, lesser curvature and on anterior and posterior walls.	Pea-sized — steep, wall-like hard edges — base deep, yellowish-white colored — also many irreg. ulcerations. Do not extend deeper than musculature.	Typical tubercles with giant cells.	Not mentioned.	Male.	55
Mathieu.	Many.	Not mentioned.	No gross description.	Caseous tubercles and tuberculous tissue infiltrating muscular coat.	Not mentioned.	Male.	58
Weigert.	Three.	Not mentioned.	Lentil-sized — round — surrounded by elevated edges — four discrete whitish nodules in floor.	Usual appearance of tubercle.	Not mentioned.	Male.	36
Barbacci.	Five.	Near pylorus.	Two had diameter of 6 c. m.	Nodules of embryonic cells with caseous center.		?	?
Kuhl. Case 1.	?	?	?	Stated to be certainly tubercular by Hamilton.	No.	?	?
Case 2.	?	?	?	Caseating nodules.	Yes.	?	?
Case 3.	?	?	?	Caseating nodules.	Yes.	?	?

TUBERCULOSIS OF THE NOSE, WITH REPORT OF A CASE OF PRIMARY TUBERCULOSIS.*

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The report of a single case of any disease is not always of much value, but considering the fact that nasal tuberculosis, and particularly primary tuberculosis of the nose, is so rare, the following case was considered of sufficient importance to be reported rather fully.

History. — G. H., aged 36, a very strong, healthy man, married and having healthy children, consulted me about nineteen months ago (April, 1896) for what he supposed to be a " cold in the head." The patient had had rather a severe attack of " grip " some months before, and since that time had been conscious of more or less obstruction of the left nostril, with considerable secretion. The patient's family history was of the best, and showed no cases of tuberculosis or syphilis as far as known. The patient himself had always been exceptionally strong and well (over six feet in height and broad in proportion). He gave a history of having had a chancre some years before. The other symptoms given were so incomplete that it could not be positively determined whether he had really had syphilis or not. There were no present indications; nothing could be discovered on examination that even remotely suggested a previous syphilis. The examination of the lungs, made also very carefully by his family physician, was negative. The other organs were apparently in a perfectly healthy state. Absolutely nothing abnormal could be found in any part of the body. The examination of the sputum was also negative. The posterior nares, pharynx and larynx, with the exception of a slight chronic pharyngitis, were in excellent condition. On examining the nose the inferior turbinal and septal mucous membrane of the left nostril was seen to be somewhat inflamed. There was a growth a little larger than a small cherry, with an irregular surface, looking almost like a raspberry, on the cartilaginous septum. This was attached to the septum by a rather broad base, was not freely movable, and was rather firm to the touch. An operation with the cold snare was advised, but the patient not desiring an operation at this time, was given a mild alkaline spray, and told to present himself from time to time for examination. This he did not do; he did not come again for over a month. The tumor, which had grown a little in the interval, involving part of the cartilaginous septum anteriorly, had a marked irregular grayish-red surface, and presented a small ulcer at one point. Potassium iodide was given, running up the dose in the usual way until quite large amounts were taken three times a day. This was continued for several weeks with suitable local treatment. The nasal condition not only did not improve under the iodide, but indeed grew considerably worse, and the tumor slightly increased in size. The discomfort from the nasal obstruction being now so great, the patient consented to an operation. Cocaine was applied and the larger part of the growth removed with a cold wire snare, the loop being tightened very slowly. There was very little bleeding. What was left of the tumor was destroyed by the electric cautery. As a positive diagnosis could not be made, the nature of the growth not being known, the piece removed was submitted to Dr. L. H. Neumann for examination. His report is as follows:

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* Read before the Albany County Medical Society, December 15, 1897.

"ALBANY, *June* 12, 1896.

"The specimen submitted to me for examination is histologically a granulation growth, containing numerous tubercle bacilli.

"LEO H. NEUMANN."

The tuberculous nature of the growth being now determined, vigorous local treatment was applied. The place of attachment of the tumor was cauterized, and subsequently concentrated solutions of lactic acid (beginning with a 40% and increasing to an 80% solution), with iodoform insufflations, were used. The nose got entirely well — the tuberculous process did not extend farther than its original seat, and now, over a year and a half later, the man is absolutely well and presents a normal septum. I saw him last two weeks ago, and he is in excellent condition in every way.

There is no doubt that lactic acid in sufficient concentration cures some localized tuberculous conditions, particularly in a place as easy to get at as the cartilaginous septum. Snow[3] reaches this conclusion. The result of the microscopical examination would seem to prove without a question, and of course does prove, that we had to deal with a tuberculous tumor of the nasal septum. The clinical diagnosis is of course by no means easy, without the aid of the microscope, and cannot be made positively. If the differential diagnosis is considered it will be seen that this is true. Beginning malignant growths often present almost similar appearances, and it is quite possible, as Manasse[9] states, to have a true, distinct, separate syphilitic tumor, which may even be attached to the mucous membrane by a pedicle. This fact does not seem to have been recognized by most writers on the subject. Manasse reports several such cases. Microscopically, the tumors in his cases were made up of round cells, and between these traces of spindle cells. Connective tissue had already formed in places. The walls of the arteries were thickened. In the connective tissue were lighter colored areas, in the centres of which were one or two distinct giant cells (Langhan's type). His tumors then were made up of a chronic granulation tissue with giant cells, very much like the tuberculom that develops in the nose and larynx of tuberculous individuals. As shown by Finder,[16] it is sometimes almost impossible to differentiate an ordinary granulation growth from a small-celled, round-celled sarcoma. These tuberculous tumors have best been described by Chiari,[10] Hajek[11] and Panzer.[12]

Right here it must be remembered, however, that a very important point in the differential diagnosis is, that in the syphilitic tumors there are never real tubercles with cheesy centres, and Manasse *never* found in them the tubercle bacillus. The following important distinctions may be drawn:

"(*a*) That nasal *syphilis* is always accompanied by a very severe inflammatory condition of the surrounding mucous membrane. Not so as a rule in tuberculosis.

"(*b*) That the favorite location for specific lesions is the bony septum, and in tuberculous, the cartilaginous.

"(*c*) In syphilitic bone destruction there is most always a very offensive fœtor of the purulent secretion, rare with tuberculosis.

"(*d*) In ulcerative nasal syphilis as a rule there is headache or neuralgias of trigeminus branches; usually absent in tuberculosis." (Zarniko.)

Too much dependence should not be placed on the third point, as the character of the secretion varies so much in different affections of the nose. The formation of tumors usually speaks for tuberculosis, although it is possible, as Michelson says, to have a polypoid hyperplasia in a luetic subject.

Genuine tumor formation in nasal syphilis has apparently only been observed by Manasse and Seiler. Seiler saw it in two cases, a man of 38 and a woman of 28. In the newer text-books, as that of Gerber,[13] primary syphilitic affections of the nose are said to occur in the nasal tip or alæ nasi. Seifert has collected 27 such cases, in which in the majority the alæ nasi, and almost never the nasal septum, was involved. The gumma is the anatomical base of tertiary nasal syphilis. This, if energetic anti-syphilitic treatment is not quickly used, usually rapidly breaks down, giving an entirely different picture from the distinct and firmer tumor of nasal tuberculosis.

The fact that this patient did not improve under iodide of potash, but even grew worse is another argument against a syphilitic growth. Even mixed tuberculosis and syphilitic local affections get better with a general syphilitic and local tuberculous treatment. The reason why uncomplicated local tuberculous affections in the nose or larynx usually get worse when iodide of potash is given is probably because the iodide causes irritation and even inflammation of mucous surfaces, thus presenting a more favorable soil for the further development of the tuberculous process.

Finally, malignant neoplasms are often very difficult to differentiate clinically, from a condition like the one under discussion. We have also the neoplastic form of nasal tuberculosis, which looks very much like an ordinary papilloma, or beginning malignant growth. Hellman reported six cases of malignant nasal tumors. Here, too, the microscope was necessary to clear up the diagnosis. The histological structure of one of Hellman's cases was like that of a bleeding septal polypus. Bleeding, as given by Dreyfuss, is an important diagnostic sign between nasal sarcoma and carcinoma. Spontaneous hemorrhage is rare in carcinoma. The reason for this, as explained by Hellman, is that in carcinoma the relatively few blood vessels lie well protected in the stroma; in sarcoma there are many vessels and very superficial, frequently simply covered by a thin layer of epithelium.

Lupus nodules in the nose must be considered. Lupus, however, belongs in a special classification. Why the tubercle bacillus should produce a different form of the disease in lupus is not known. In the nose lupus is perhaps almost always secondary. With the exception of several cases seen by Schmidt,[18] few primary cases have been observed. Taking into consideration all the above facts, I think we are justified in calling this case one of primary nasal tuberculosis, and one of the very rare primary tuberculous tumors. We have only the right to call such a growth a tuberculoma when it is made up mainly of tubercles and contains some bacilli (also Bresgen[20]). And we are only justified in calling a case primary tuberculosis when an exact examination does not reveal tuberculosis in any other part of the body.

That nasal tuberculosis, and particularly primary nasal tuberculosis, is very rare all authors agree. In a fairly thorough search of the literature of a number of years, I was able to find comparatively few reported cases. Chiari collected only twenty cases of true nasal tuberculosis. Of course the secondary cases are far more common than the primary. Bosworth[17] very truly states that tuberculosis invades the nasal passages with greater rarity than any other part of the respiratory tract. Willigk found in 476 autopsies of tuberculosis cases only one case in which the nose was involved. Weichselbaum found two cases in 164 autopsies. Baurowics[6] reported three cases of primary nasal tuberculosis. Two were cases of tuberculous tumors of the septum, occurring in otherwise perfectly healthy women. Tubercle bacilli were only found in one of his three cases. In Gaudier's[19] case of tuberculoma there were tubercles, but no giant cells and no bacilli. (His was secondary.) The patient had advanced laryngeal and pulmonary tuberculosis. Sixteen cases and six of lupus have been reported from Stoerk's clinic by Koschier.[1] Eleven showed tumors on the septum. Wroblewski[8] saw two cases, one a tumor on the septum, the other a tumor of the inferior turbinate. In both these were giant cells and bacilli. R. Sachs[21 22] gives the histories of two cases of primary tuberculous tumors on the anterior portion of the cartilaginous septum, and one case in a boy of ten. Diagnosis was confirmed by microscopic examination. A case of primary nasal tuberculoma has been reported by Polyak.[23] Other cases of nasal tuberculosis have been reported by Farlow,[5] Pluder,[2] Herzog,[7] V. Gerszewski,[15] Hicquet,[24] Boluminski[25] and Hill.[26]

In conclusion, let us consider for a moment some of the interesting features of this case. We had here a local tuberculous condition suddenly developing in a perfectly sound, strong man. Whether his attack of influenza shortly preceding the tuberculosis had anything to do with its development, cannot of course be positively determined. A great many people get influenza, and with it severe attacks of acute coryza. The experiments of Straus[4] are interesting. He examined the dust and mucus from the nasal cavities of 29 persons, all in the best health, with no indications of tuberculosis. Bouillon cultures were made with this mucus. Twenty-nine guinea pigs were taken and the fluid injected into the peritoneum of each one. Seven died of septicæmia or purulent peritonitis; thirteen remained healthy; nine got tuberculous processes, which plainly started in the peritoneal cavity. This simply shows that tubercle bacilli are often present in the noses of healthy persons coming in contact with tuberculous subjects, and as a result primary tuberculous lesions might easily develop there. The severe coryza that our patient had may have caused a slight erosion or ulcer of the septal mucous membrane, and, unfortunately for him, the tubercle bacillus there gained an entrance into the deeper tissues and produced this beautiful example of a tuberculous tumor. It is a wonder that cases of primary nasal tuberculosis are not more common, as most everybody is liable to get tubercle bacilli in the nose, and investigations have shown that bacteria may penetrate into unbroken mucous surfaces, even through the epithelium (Wright). In many cases they are then destroyed by phagocytosis.

Time only will tell whether this patient will ever develop a further tuberculous condition, but for the present, at any rate, we must consider him cured.

172 WASHINGTON AVENUE.

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For the ANNALS.

NOTE ON DIASTATIC PREPARATIONS.

BY WILLIS G. TUCKER, M. D., PH. D.,

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Having recently completed a series of tests of some of the medicinal preparations of malt and cod liver oil, which are now so largely prescribed as digestive aids in certain forms of faulty digestion, with consequent imperfect food assimilation, no less than for their direct value as nutrients, it has seemed to me that the results obtained were of sufficient interest to warrant their publication, with a brief statement of the method employed in determining the diastatic value of the articles examined. The samples tested were purchased by myself at drug stores in New York City, Troy and Albany early in January of the present year.

Three preparations of the class referred to, which appear to be largely prescribed by physicians, were selected, and one sample of each, in an unbroken, full-sized package, was purchased in each of the localities named. For the purpose of record these were numbered 1, 2 and 3.

The value of the cod liver oil in such preparations is unquestioned, and there is little doubt that such articles, put up by reputable houses, contain the full amount of oil stated, as present, upon the label, and for this reason no determination of the amount of oil present in the samples was made, but the inquiry was restricted to a careful determination of the diastatic activity of the preparation, since this *is* likely to vary, and upon this activity the remedial value of such articles largely depends. The method employed in making this determination was one which I had previously employed in similar work, and which has been found to yield very satisfactory and concordant comparative results.

Briefly stated, this method consists in adding to a definite quantity of gelatinized starch, carefully prepared from the best Bermuda arrowroot, and of three per cent. strength, contained in a glass flask, and at a temperature of 99-100° F., a weighed amount of the sample, and keeping the flask at this temperature for exactly half an hour. At the end of this time the further action of the diastase in the preparation upon the starch, which latter must necessarily be present in considerable excess, is checked by the addition of a solution of sodium hydroxid. The liquid is then diluted to a definite volume with distilled water, and the sugar produced by the transformation of the starch is determined as dextrose by Fehling's solution. The quantity of sugar originally present in each of the samples had previously been determined, and this amount was deducted from the total amount found in each case, and the remainder calculated as maltose, the reducing power of which was taken, as commonly, as two-thirds that of dextrose. Precisely the same method was employed in each determination, and the conditions were in all respects identical in all the tests.

The results may most readily be understood if stated in parts by weight of maltose, or its equivalent, in reducing sugars, produced by one part of each of the preparations examined, and these were found to be as follows in the three tests which were made of each article:

No. 1 = 4.42, 4.98, 4.24, the average being 4.54.
No. 2 = 1.66, 1.41, 1.32, average 1.46.
No. 3 = 0.52, 0.51, 0.54, average 0.52.

It is, I think, fair to state that the first of these preparations was Maltzyme with Cod Liver Oil, and that these results plainly indicate its diastatic activity. Such preparations as this have aptly been styled "digestive foods," and their value, as previously stated, in large measure depends upon the amounts of active diastase which they contain. For this enzyme, possessing the property of bringing the starch in food into a soluble condition and converting it into easily assimilable forms of dextrin and sugar, is a valuable aid to digestion in certain cases, and if its activity is unimpaired it is capable of exercising an important influence upon the digestive process when properly administered.

4 LANCASTER STREET.

Clinical and Pathological Notes.

Cerebral Amblyopia.

This patient consulted Dr. Culver, December 28, 1897, complaining of loss of sight. Dr. Culver's examination resulted as follows: Each eye had ten per cent. of Snellen's normal of visual acuity; this was without the use of any glass, and no glass increased either eye's acuteness of vision. Ophthalmoscopic examination showed each eye to have a normal fundus. It, and skiascopy showed the eyes to be emmetropic, needing no glass. He thought himself obliged to return at once to his school, hence was given an atropine solution to use as a collyrium, an alterative for internal use, and was next seen by Dr. Culver the 7th day of January, when no evident change in condition of his eyes was discoverable.

On January 8, 1898, Dr. Culver referred the patient to me, requesting that I seek some nervous origin for the inactivity of his visual apparatus, and the following facts were ascertained:

The patient was a young man, nineteen years of age, single, a native of New York, and a resident of Denver, Col. His father had died during the patient's infancy, the cause of death not being known by him. His mother is subject to "fainting attacks," and to "neuralgic headaches," occurring "once a month or so," or when she is excited. He has never had brothers or sisters. A half sister is delicate.

The patient has always been well until last spring (1897). In April he was struck in the head with a brick, during a quarrel, and was unconscious for a few minutes. Three stitches were taken in the scalp. No secondary manifestations occurred. He afterward was employed in a wholesale grocery house, and needed often to spend a day in a damp vault storing cigars. One day he fainted in the vault and was obliged to stop work. He was weak for a few days. After this he remained perfectly well, and spent the summer camping and hunting in the Rocky mountains, often above the timber line. In the fall he entered school in Massachusetts. About a month after he began his school work, pain in his eyes began, and at the same time he had attacks of dizziness, sometimes as often as every other day. During the Christmas vacation they ceased. These attacks began with buzzing in the ears and a flash of yellow light before the eyes. With this warning he needed to grasp some support to save himself from falling. Once he shut his teeth quickly and bit the side of his cheek so that it bled, but he has never bitten his tongue. He does not know that he ever completely lost consciousness; nor did he become drowsy afterward. He has never soiled his clothing or bedding. There is a sharp pain through the head for a short time after the attack, with throbbing; sometimes this is a shooting pain through the right temple, and may precede or follow the attack. No nausea or vomiting. He has never fallen, nor has he ever dropped anything from his hands, so far as he knows. Sleeps soundly and well. Organic reflexes normal. Physical examination gave negative results, and all organs appeared normal.

On January 10, strychnine, gr. $\frac{1}{60}$ *quat. in die*, was prescribed. On the afternoon of January 11 each eye had 30% of Snellen's normal vision without a glass.

January 13th the patient reported that he had "shot two small sparrows at a distance of twenty-five feet," and Dr. Culver's examination revealed that his right eye gave 120% of Snellen's normal vision and his left eye 125%. He has since continued in perfect health.

The case is of interest from the train of remote symptoms, secondary to a predisposing injury to the head, and reaching their full development after a change from outdoor life in the mountains to the sedentary habits of school; and it also presents an unusual form of attack, of functional nature, resembling seizures of petit mal, accompanied by loss of sight without ocular lesion.

The case further shows a striking analogy in symptoms (although differing ætiologically) with a series of cases recently reported by P. Silex, under the title " Peculiar Disturbances of Sight after Blepharospasm." (*Archiv für Psychiatrie und Nervenkrankheiten, xxx, 1, 1898.*) This writer observed a series of cases of scrofulous children, in whom keratitis, treated by the prolonged application of irritating collyria, was followed by blindness. An interval of from four to ten weeks was required for the restoration of sight after all local symptoms of disease had disappeared. The possible lesions were classified under five heads: I. Reflex amblyopia; 2. Hysteria; 3. Lack of education of the sense of sight; 4. Mind-blindness; 5. Cortical blindness. The writer discusses these and finds that none is applicable to his cases. He gives a brief description of the distinction drawn by Munk between mind-blindness and cortical blindness. By the latter term Munk refers to a condition following extirpation of both occipital lobes, in which the ability to see is entirely lost. The patient has neither subjective nor objective sensations of light, and merely has recourse to the memories of sight remaining in other parts of the cortex. Magnus' later work upon cortical blindness is based upon a case of the more frequently described double homonymous hemianopia. None of these explanations fit the cases under consideration. The writer concludes that it can only be said of his patients that they exhibited a functional cerebral lesion which showed itself as a very wonderful ocular symptom complex, and a very peculiar alteration of the mind. For explanation he is obliged to content himself with a " complex of different neurotic, motor, sensory, psychic and trophic symptoms which go under the name of hysteria."

J. M. MOSHER.

Editorials.

The Physician in Literature.

The ANNALS has received, through the courtesy of *The Century Company*, copies of Dr. S. Weir Mitchell's novel, "Hugh Wynne," and "Doc. Sifers," by James Whitcomb Riley. In the latter the popular Hoosier poet seems to have done for the American country doctor what Ian MacLaren has done for the Scotch physician of kindly memory, whose story has had so many thousands of readers in this country within the last two years.

In "Hugh Wynne" a leading American physician has written what, in the opinion of many critics, is one of the greatest books of our time. After a successful serial course in *The Century Magazine* the book, "Hugh Wynne," issued in October last, is now being printed for the seventh time, in an edition which will bring it up to the fiftieth thousand, a record almost without precedent among American publications, and a glowing tribute to its merit.

The ANNALS acknowledges for its readers the compliment conveyed in "Doc Sifers" to the profession it represents, and shares the pride felt by all physicians in the renewed manifestations of versatility displayed by the author of "Hugh Wynne."

Electrical Microscopic Projection.

There was nothing done at the meeting of the State society which proved more interesting to physicians generally, and more profitable to teachers of medicine, than the demonstration by Dr. Hailes of the manner in which pathology, bacteriology, histology and biology are illustrated at the Albany Medical College by means of the electrical microscopic projection.

In the limited time given to microscopical demonstration, and in the need of direct and much individual attention to each student, either many assistants must be employed or the work is hurriedly and incompletely accomplished. His methods, however, allow to be thrown upon the screen in their natural colors sections illustrative of embryology, histology or pathology, and thus in one demonstration the whole class receives instruction upon the subject each is about to do for himself. In fact, as Dr. Hailes so well said, it is actually taking the class into a huge microscope, and with control of the mechanical stage and fine adjustment, bringing to the attention of the students every point of interest upon the screen. The outfit consists of a Colt's electrical projection lantern, stereopticon and projection microscope, with Bausch and Lomb's special projection lenses.

The New York State Medical Society.

The meeting of the New York State Medical Society was characterized by the high scientific plane of the papers read, by the large attendance of members and delegates and by the promptness with which the program was carried out. The wisdom of the business committee in limiting the number of papers was fully vindicated, and even the number read was for too large for the most profitable discussion and full consideration.

It is certainly unfortunate that in a general society the tendency of the papers should be along special lines and general topics which are of all-pervading interest should be neglected. Of the great medical subjects at the present time — serum therapeutics, the administration of the internal secretions, immunity, natural and acquired, nothing was said, while the relation of bacteria to normal and pathological conditions received scant consideration. The proposal to hold the meeting alternately in New York City, Buffalo and Albany was wisely rejected. The ease with which the society at its meeting in Albany could properly influence medical legislation is sufficient reason for the present arrangement, although the society has apparently never taken sufficient advantage of this opportunity. The session closed with the election of Dr. John O. Roe to the presidency, and Dr. E. F. Brush, of Mount Vernon, to the vice-presidency, with the re-election of the present efficient secretary and treasurer.

Scientific Review.

The Systemic Complications of Gonorrhœa. — The conception that systemic infection may result from gonorrhœal urethritis is by no means a recent one, since many of the earlier clinicians had noted the association and relation of certain secondary manifestations to blenorrhagia. As early as 1833, Stanley, in his admirable memoir, pointed out that certain meningo-medullary complications at times supervened upon this malady. Brandes (*Arch. Gen. de Méd., 1854*) and Lacassagne (*Ibid., 1872*) studied the cardiac implications of this disease, and since then the contributions to medical literature of cases of systemic infection have been numerous. The bacteriological conception of the specificity of the general infections belongs to a comparatively more recent date, having originated as a result of the microscopical studies subsequent to the discovery of the *gonococcus* by Neisser in 1879.

That the repartition of the gonococcus can occur by means of the circulatory system there can exist no doubt, as the more recent clinical and bacteriological studies of affections of this nature irrefutably demonstrate this fact. The tissues affected in the most marked degree all belong histologically to the connective tissue group, and more particularly to the class of serous membranes or of tissues closely related, like the intima of blood-vessels or the endocardium.

Of this type of tissue the most frequently attacked by the systemic infection are the serous membranes as exemplified by membranes of the joints. They certainly enter into the first rank and deserve high importance in view of the frequency with which they are affected, and also from the fact that the bacteriological confirmations of their specific nature have been many. The early attempts of microscopical verification of these complications were unsuccessful, but Horteloux and Bousquet (*Gaz. des Hôp. 1885*) found the gonococcus in a purulent arthritis. Wyszemirsky, shortly after, similarly succeeded. In 1890 Deutschmann (*Alb. V. Gräfe's Arch. f. Oph., p. 109*) obtained from an arthritis secondary to gonorrhœal ophthalmia the specific organism of Neisser.

The arthritic infections sometimes occur as early as the first week of the malady, but more frequently they begin during the third week. The onset is generally sudden, the pain sharp and swelling considerable, and the monarticular involvement of one knee is the more frequent rule, but polyarticular involvement is not uncommon, and when so the elbow or wrist rarely escapes. The tendinous structures sometimes become affected but less often than the joints. The peritoneum is only with great rarity affected by the sanguineous route since most of the cases of blenorrhagic peritonitis have been direct extensions of the infection to the peritoneal cavity. Clinically, gonorrhœal pleuritis and pericarditis have been observed, but up to the present no published case exists in which the gonococcus was demonstrated in such a manner as to cause no doubt of its identity. The gonorrhœal form of pleurisy has recently been the subject of a general review by Fartout (*Arch. Gén. de Méd. 1895*), but none of the published cases received bacteriological confirmation. Meningeal lesions have been noted but here, also, there exists no case where the bacteriological examination is conclusive of the specific nature of the affection.

Instances of true gonorrhœal septicæmia in which the gonococci have been detected in the blood are extremely scanty. Marcel Sée, in his exhaustive monograph, has been able to collect but a single conclusive case, which was studied by Blumer and Thayer (*Le Gonocoque 1897 Paris*). Endocarditic implication is less uncommon as evidenced by the cases of Leyden, Weichselbaum, Ely, Thayer and Blumer, and Dauber and Borst (*Le Gonocoque, Ibid*). Other forms of systemic infection may occur, but much more rarely than some of the lesions cited. More careful clinical and bacteriological study, it is believed, would demonstrate the greater prevalence of general infection than is now generally recognized by the profession.

The treatment of systemic infection is supportive in addition to certain special considerations in different phases of the systemic complication, but no mode of treatment has proven particularly successful. The prognosis in the cardiac complications is distinctly grave, whilst the arthritic troubles prove singularly rebellious to treatment.

A. J. LARTIGAU.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D

Compensation for Destruction of Tuberculous Animals. — January 13, 1898, Senator Ford introduced Senate bill number 79, entitled " An Act to provide compensation to the owners of animals and cattle destroyed pursuant to chapter 674, of the

Laws of 1894, and repealing certain acts relating thereto in the City of New York."

It provides for the compensation of owners of cattle and other animals destroyed because of tuberculous or other taint in the City of New York, during 1896 and 1897; fixes the rate of compensation; provides for the destruction and removal in the future of such animals according to local sanitary code; gives board of health of New York City power to audit and determine all claims arising from such destruction; authorizes the board of estimate to allow such claims, and also authorizes the comptroller to raise the moneys for the payment of the claims by the issue of revenue bonds.

The "Osteopath" Bill in New York. — February 17th, Mr. Raplee introduced Assembly bill introductory number 813, which "legalizes and regulates the practice of Osteopathy in the State of New York." Physicians throughout the State who have been cognizant of the struggles of their fraternity against this vicious measure in some of the western States, have prayed that they would be spared a like affliction; but it has come, and every reputable physician should lend his aid in strangulating, in its inception, the measure now in the Assembly.

Last year the Legislatures of South Dakota, Colorado and Illinois passed this bill and the respective governors of these States saved the medical profession from ignominy by promptly vetoing them.

It is pretty generally known that the bill will permit a certain class of men to practice medicine and surgery by "peculiar" methods, manipulation, massage, etc. They are legalized to make diagnosis and treat diseases after "practicing osteopathy" one year in any other State, whereas the regular physician is obliged to study years to obtain the necessary educational requirements to obtain his diploma and then he must pass a rigid State examination.

The Ohio courts have held that osteopathy, clairvoyance, mind healing, faith cure, hypnotism, massage and Christian science are in the same class. From this we can easily see what additional charlatanism and quackery we will very likely have to contend with should this bill become a law.

The County and State societies should take the initiative and oppose this bill at once.

BULLETIN OF MEDICAL LEGISLATION.

Introduced.	Printed Number.	TITLE.	Presented by	Referred to Committee on	Date of Hearing.	Amended.	Date of Action.	Signed by Governor.
Jan. 5, '98	S. 269	An Act, "To provide for the treatment of all persons diseased, incompetent or dangerous from the use of alcoholic stimulants, opiates, narcotics or drugs of any description."	Mr. Brush.	Public Health.		In Com'tee Jan. 27. Referred to Com'ee on Judiciary Feb. 1. In committee Feb. 17.		
Jan. 5, '98	S. 435	An Act, "To amend chap. 378 of the Laws of 1897, relating to appointment of members of and duties of Health Board of Greater New York."	Mr. Brush.	Cities.	Feb. 15.	In Com'tee Feb. 10.		
Jan. 13, '98	A. 79		Mr. Laimbeer.	Cities.				
Jan. 13, '98	S 334	An Act, "To provide for proper sanitation, ventilation and protection from fire of school houses and other public buildings."	Mr. Wray.	Judiciary.		In Com'tee Feb. 3.	Tabled Feb. 15.	
Jan. 20, '98	A. 278		Mr. Marshall.	Cities.				
Jan. 20, '98	S. 332	An Act, "To amend the State Charities Law, relating to the licensing and regulation of dispensaries by the State Board of Charities."	Mr. Sullivan	Cities.	Jan. 26, Feb. 2. In joint Com. Feb. 16.	In Com'tee J'y 26. Referred to committee on Public Health. In committee Feb. 3.	Recommitted Feb. 8.	
Jan. 28, '98	A. 466		Mr. Davis.	Public Health.				
Jan. 20, '98	S. 181	An Act, "To amend previous laws relating to the practice of veterinary medicine."	Mr. Nussbaum.	Public Health.				
Jan. 21, '98	A. 330		Mr. Coughtry.	Public Health.				
Jan. 24, '98	S 217	An Act, "To provide, by the appropriation of $77,252, for the erection and completion of a portion of Dannemora State Hospital for Insane convicts."	Mr. Chaloon.	Finance.				

Jan. 25, '98	S. 230	An Act, "To regulate pharmacists and druggists, and to prevent accidents and mistakes in the preparing and compounding of medical prescriptions, in the City of New York."	Mr. Ford.	Cities.				
Jan. 21, '98	A. 311		Mr. McKeown.	Public Health.				
Jan. 25, '98	S. 239	An Act, "To provide for the erection and maintenance of public hospitals for the treatment of persons suffering from contagious or infectious diseases, in the borough of Brooklyn."	Mr. McNulty.	Cities.				
Feb. 1, '98	S. 309	An Act, "To discourage the drink habit and to prevent drinking of spirituous and other liquors."	Mr. Wray.	Internal Affairs.				
Feb. 15, '98	A. 849		Mr. Laimbeer.	Excise.				
Feb. 1, '98	S. 310	An Act, "Amending previous laws relating to the incorporation of Bellevue Hospital Medical College."	Mr. Cantor.	Judiciary.				
Feb. 4, '98	A. 605		Mr. Donnelly.	Charti. and Religious Institutions.				
Feb. 2, '98	S. 324	An Act, "To amend sections of the agricultural law, relating to receptacles for butter."	Mr. Johnson.	Agriculture.				
Jan. 19, 98	A. 462		Mr. Witter.	Agriculture.				
Jan. 24, '98	A. 347	An Act, "Appropriating $160,000 for the Craig Colony for Epileptics."	Mr. Kelsey.	Ways & Means.			Passed Feb. 15.	
Feb. 2, '98	S. 326		Mr. Humphrey	Finance.				
Feb. 16, '98		Assembly Bill No. 347 brought to Senate.		Finance.				
Feb. 3, '98	S. 348	An Act, "To regulate the occupation of barbers and to provide for the sanitary inspection of barber shops."	Mr. Lamy.	Judiciary.				
Jan. 26, 98	A. 338		E. C. Brown.	General Laws.				
Feb. 3, '98	S. 347	An Act, "To amend Civil Code relating to the appointment of a foreign committee of the persons and property of a lunatic, idiot or habitual drunkard."	Mr. Raines.	Codes.		In Committee Feb. 17.		
Feb. 9, '98	S. 410	An Act, "To amend previous laws relative to pharmacists and druggists in Greater New York."	Mr. Brush.	Affairs of Cities.				

BULLETIN OF MEDICAL LEGISLATION — CONTINUED.

Introduced.	Number.	TITLE.	Presented by	Referred to Committee on	Date of hearing.	Amended.	Date of action.	Signed by Governor.
Feb. 11, '98	S. 465	An Act, "To amend Code of Civil Procedure, relating to coroners and abolishing coroners' juries."	Mr. Brackett.	Codes.		In Committee Feb. 17.		
Feb. 11, '98	S. 466	An Act, "To amend the county law in relation to the number of coroners in the counties of the State."	Mr. Brackett.	Codes.		In Committee, Feb. 17.		
Feb. 14, '98	S. 472	An Act, "Relating to coroners of north towns of Erie County."	Mr. G. A. Davis	Internal Affairs.				
Feb. 16, '98	S. 508	An Act, "To amend Insanity Law in relation to the number of managers of State hospitals."	Mr. Wilcox.	Finance.				
Jan. 20, '98	A. 514	An Act, "To amend Agricultural Law to prevent fraud in sale of paris green."	Mr. Ives.	Agriculture.			Passed Feb. 8.	
Feb. 9, '98		Assembly bill No. 514, brought to Senate	Mr. Ives.	Agriculture.				
Jan. 20, '98	A. 267	An Act. "To amend Agricultural Law relative to inspection of dairy products."	Mr. McLaughlin.	Agriculture.				
Jan. 20, '98	A. 283	An Act, "To amend Civil Code relative to veterinary surgeons."	T. P. Sullivan	Codes.			Passed Feb. 1.	
Feb. 2, '98		Assembly Bill No. 283, brought to Senate	Mr. Sullivan.	Codes.				
Jan. 21, '98	A. 324	An Act. "To amend Public Health Law in relation to the adulteration of food."	Mr. Finn.	Public Health.				
Jan. 21, '98	A. 329	An Act, "To amend the Agricultural Law in relation to dairy products."	Mr. C. B. Gale.	Agriculture.				
Jan. 21, '98	A. 335	An Act. "To amend previous laws relating to the registration of plumbers and the supervision of plumbing and drainage in the cities of the State."	Mr. Hatch.	Cities.				

Jan. 24, '98	A. 348	An Act, "To regulate the practice of midwifery in Montgomery county by others than legally authorized physicians."	Mr. Murphy.	Public Health.				
Jan. 25, '98	A. 682	An Act, "To amend Laws of 1897 relating to hospitals and dispensaries in Greater New York, (appropriations to)."	Mr. Tiffany.	Cities.				
Jan. 27, '98	A. 444	An Act, "To regulate the occupation of barbers, and to provide for the sanitary inspection of barber shops."	Mr. Bondy.	General Laws.				
Jan. 27, '98	A. 445	An Act, "To amend previous laws in relation to the insane."	Mr. Paris.	General laws.				
Jan. 27, '98	A. 447	An Act, "To abolish the office of coroner within the county of Ulster and to provide for the performance of the duties of coroner by the Board of Health in said county."	Mr. Tremper.	Interal Affairs.			Passed Feb 15.	
Jan. 31, '98	A. 509	An Act, "Providing for the appointment and examination of medical expert witnesses in certain cases and regulating their compensation."	Mr. Kelsey.	Codes.				
Feb. 2, '98	A. 576	An Act, "To amend previous laws and providing for the sanitary protection of sources of water supply of Rochester, N. Y."	Mr. Haight.	Cities.				
Feb. 2, '98	A. 555	An Act, "To amend previous laws relating to the practice of veterinary medicine and surgery."	Mr. Pickett.	Public Health.				
Feb. 7, '98	A. 642	An Act, "To amend the Agricultural Law relating to the taking of samples of milk for analysis."	Mr. Tiffany.	Agriculture.				
Feb. 11, '98	A. 786	An Act, "To ammend previous laws relative to the protection of sources of water supply of Rochester."	Mr. Kelsey.	Cities.				

BULLETIN OF MEDICAL LEGISLATION — CONTINUED.

Introduced.	Number.	TITLE.	Presented by	Referred to Committee on	Date of hearing.	Amended.	Date of action.	Signed by Governor.
Feb. 11, '98	A. 795	An Act, "To establish a State Board of Embalmers and regulate the practice of embalmers."	Mr. Hutton, Jr.	General Laws.				
Feb. 17, '98	A.	An Act, "To provide for the better protection of the public health in relation to sale and manufacture of cigarettes."	Mr. Mullaney.	Public Health.				
Feb. 17, '98	A.	An Act, "Amending previous laws relating to Pharmacy."	Mr. Raplee.	Public Health.				
Feb. 17, '98	A.	An Act, "Legalizing and regulating the practice of Osteopathy in the State of New York and fixing penalties for the violation of the provisions of this act."	Mr. Raplee.	Public Health.				
Feb. 17, '98	A.	An Act, "To provide for the proper labeling of poisonous articles."	Mr. Oliver.	Public Health.				
Feb. 18, '98	A.	An Act, "To provide compensation for animals killed in New York city under the Tuberculosis Law."	Mr. Lowenthall.	Cities.				
Feb. 18, '98	A.	An Act, "To amend previous laws relating to the election and compensation of coroners in Rensselaer county."	Mr. Russell.	Int. Affairs.				
Feb. 18, '98	A.	An Act, "In relation to the inspection of cold storage warehouses by boards of health in cities of the first class."	Mr. Mullaney.	Public Health.				
Feb. 18, '98	A.	An Act, "To amend previous laws relative to the sale of skimmed milk."	E. La Grange Smith.	Agriculture.				

S. Senate. A. Assembly.

Note: In making up this bulletin, in addition to the bills introduced during the month, those bills previously reported, which have advanced in process of legislation will be re-inserted.

Obituary.

EDWIN B. KARNER, M. D.

Dr. Karner died at his home, New Marlborough, Mass., December 20, 1897, of erysipelas, after a short illness of two days. He was born March 25, 1856, at South Egremont, Mass., and graduated at the Albany Medical College in 1883. He practiced medicine at Stottville, N. Y., and then removed to Westfield, Mass., where he built up a good practice, and he was esteemed for his thorough study and high moral character. He was prominent in the church work of Westfield. Duty called him to the old home in New Marlborough, where he has practiced for several years with success, devotion and self-sacrifice. All through the towns where he has lived and labored there is mourning to-day for a doctor well loved and everywhere respected.

FRANK L. SMITH.

Medical News.

ALBANY MEDICAL COLLEGE ALUMNI ASSOCIATION OF GREATER NEW YORK. — The third annual banquet of this association was held at the Hotel Savoy, New York City, on the evening of January 20th, 1898, and was an enthusiastic reunion of graduates of the college and their guests. The tables were arranged in the shape of the letter U. The president of the association, Dr. H. T. Hanks, presided. No set toasts had been arranged, but remarks were made by the president, Dr. Hanks, and guests of the association, among whom were Rev. Dr. A. V. V. Raymond, president of Union University; Rev. Dr. George Alexander, president Union College Alumni Association of New York; Rev. Dr. W. C. Bitting, Hon. Charles M. Earle, Dr. Joseph D. Craig. Dr. George Shrady, Capt. Arthur Murray, U. S. A., Dr. J. M. Mosher, Dr. T. D. Crothers, Edgar S. Barney, Esq., secretary Union College Alumni Association of New York; Dr. H. B. Maben, president Albany Medical College Alumni Association; Dr. M. L. Rhein.

Among others present were Drs. J. P. Kimball, '64; Edward F. Quinlan, '68; R. E. Burton, '55; J. W. Warner, '47; R. F. Macfarlane, '88; Edwin Barnes, '65; W. C. Spalding, '81; C. deW. Van Dyck, '79; Wm. Stevens, '75; S. E. Ullman, '80; H. C. F. Mueller, '87; A. Parker Muir, '96; A. L. Browne, '86; John A. Cutter, '86; M. H. Hunt, J. J. Van Rensselaer, '59; Chas. Van Wert, '87; Geo. Archie Stockwell, '66; E. J. Gallagher, '92; Thos. H. Willard, '87; F. N. Patterson, Geo. H. Baker, '86; F. W. Loughran, '90.

The faculty of the Albany Medical College was represented by Dr.

Craig, who spoke of the progress of medical education at that centre of learning. The thorough equipment and practical working of the Bender Pathological Laboratory was explained, and the plans of the new City Hospital were shown and briefly described. Dr. Craig also expressed the belief that within a few years a new Medical College building would be erected as part of a group of buildings with the Bender Laboratory and City Hospital. The facilities for the teaching of medicine at Albany would then be unexcelled.

The influence of the Regents' examinations and the extended course in elevating the standard of medical education was spoken of, and while a better educated class of young men were seeking to become doctors, still the average attendance had not markedly diminished. Every year the doctor was becoming a better educated and more skilful man.

In closing, Dr. Craig said that he was not much of a prophet, but hoped to live to see certain changes in the scheme of medical education, whereby instruction in the ethics of life would be added to thorough practical training in the various departments of scientific medicine, and that the divinity school would share with the school of medicine, as perhaps a department of psychology, the investigation and consideration of the attributes of mind, to the end that the feelings and the will might be recognized and utilized as valuable adjuncts of the healing art.

To find time for the accomplishment of these things, such elements of medical education as osteology, physics, chemistry and materia medica must, of necessity, be taught in preparatory schools, and a student's competency in them be made a part of the entrance examination test. Young men thus trained in the elements of ethics and of mind, in addition to the purely materialistic principles of scientific medicine, would be of more symmetrical mental development, and would be able to exert a larger influence for the well-being of the community, and would occupy an even higher station than they now do in the estimation of the world both as men of competent scientific knowledge and as gentlemen.

ALBANY COUNTY MEDICAL SOCIETY. — A regular meeting was held Wednesday evening, January 19, 1898, the president, Dr. J. V. Hennessy, in the chair. A paper was read by Dr. T. K. Perry upon "Diphtheria as We Know It and Treat It To-day." Dr. Perry's paper was discussed by Drs. Bigelow, Vander Veer, Allen and MacFarlane. A paper was read by Dr. J. L. Archambault upon "Serum Therapy, Intubation and Tracheotomy." Dr. Archambault's paper was discussed by Drs. Perry, Happel, Blumer, Featherstonhaugh, Archibold and Vander Veer. Dr. Davis, of the memorial committee upon the death of Dr. W. J. Kernan, reported resolutions, which were adopted, ordered placed upon the minutes of the society, and a copy to be sent to the family of the deceased.

A regular meeting was held Wednesday evening, February 16, 1898, the president, Dr. J. V. Hennessy, in the chair. A paper was read by Dr. T. W. Jenkins upon "Micro-Organisms." Dr. Jenkins' paper was discussed by Drs. Blumer, Theisen and Hailes. A paper was read by Dr. George Blumer upon "Tuberculosis of the Stomach." Dr. Blumer's paper was discussed by Drs. Jenkins, MacFarlane and Theisen.

AN ARMY MEDICAL BOARD will be in session at Washington City, D. C., during the month of May for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War before April 15, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between 22 and 29 years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1898.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

GEO. M. STERNBERG, *Surgeon-General, U. S. Army.*

THE TWENTY-SECOND ANNUAL REPORT of the Child's Hospital, Albany, has been issued for the year ending September 30th, 1897. A satisfactory financial showing is made. The work of the hospital varies little from year to year. The report of the medical staff shows that 317 cases were treated during the year. The percentage of cures was 57, and the mortality slightly over two per cent. The staff has been strengthened by the appointment of Dr. H. Van Rensselaer as attending physician and Dr. C. H. Moore as ophthalmic and aural surgeon.

THE ADVISORY BOARD OF MANAGERS of St. Peter's Hospital, Albany, have issued their report for the year ending September 30, 1897. The report shows that 344 patients received treatment in the hospital during the year, and that 4,521 patients received treatment in the dispensary. There has been a slight decrease in the number of patients treated, but a substantial increase in charity work, made possible by the generosity of the subscribers to the hospital. During the year many improvements have been made. Two wards for paying patients have been opened, separate from the charity wards. A fire escape of the most approved design has been erected, an ambulance has been ordered, and the operating-room and interior of the building have been generally renovated. The financial report makes a commendable showing, and indicates that the hospital has been able to make a payment on the mortgage debt. The report is an encouraging one, and the appeal of the hospital for benefactions is well sustained by the evidence of work accomplished.

In closing, the report makes grateful reference to the long service, friendship and sagacious counsel of the late Dr. Thomas Hun.

THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. — The fifty-fourth annual meeting of the American Medico-Psychological Association will be held in St. Louis, Mo., commencing May 10th, 1898, and continuing until May 13th, 1898, inclusive. Arrangements have been make for the accommodation of members at the Southern Hotel, where all meetings of the Association will be held.

It is particularly requested that those who purpose reading papers, notify the secretary of this intention at once, and send to him as soon as possible the titles of papers.

C. B. BURR, *Secretary*, Flint, Mich.

ST. LOUIS LARYNGOLOGICAL AND OTOLOGICAL SOCIETY. — On December 27th the St. Louis Laryngological and Otological Society was formed, composed of those physicians of St. Louis who limit their practice to the treatment of diseases of the nose, throat and ear. Dr. J. C. Mulhall was elected president, Dr. J. B. Shapleigh vice-president, Dr. F. M. Rumbold secretary and Dr. A. S. Barnes, Jr., treasurer, for the year 1898. Meetings will be held monthly, and it is expected that the scientific programmes furnished will be highly interesting and instructive. The membership is limited, but the privilege of inviting professional friends is reserved to each member.

— The Fifth Annual Meeting of the American Medical Publishers' Association will be held in Denver, on Monday, June 6, 1898 (the day preceding the meeting of the American Medical Asssociation). Editors and publishers, as well as every one interested in medical journalism, are cordially invited to attend and participate in the deliberations. Several very excellent papers are already assured, but more are desired. In order to secure a place on the program, contributors should send titles of their papers at once to the secretary,

DR. CHAS. WOOD FASSETT, St. Joseph, Mo.

AMERICAN MEDICAL ASSOCIATION. — One of the features of the meeting of the Section on Neurology and Medical Jurisprudence of the American Medical Assocation will be a joint session with the Section on Obstetrics and Diseases of Women for a full consideration of the "Relation of Pelvic Disease to Nervous and Mental Affections." The subject will be introduced by six short papers (three from the Neurological and three from the Gynecological Section) contributed by eminent authorities upon the subject, and will be continued in general discussion.

THE DATE OF THE NEXT COMMENCEMENT of the Albany Medical College has been changed from April 19 to April 20, 1898.

NEW BOOKS. — Blakistons have announced as in active preparation *The Gross and Minute Anatomy of the Central Nervous System*, by H. C.

GORDINIER, A. M., M. D., Professor of Physiology and Anatomy of the Nervous System in the Albany Medical College.

It is stated that Dr. Gordinier aims to furnish American and English readers with a concise, practical book on this very important subject. He has devoted many years to special work on the nervous system, and speaks, therefore, as a recognized authority on matters pertaining to this branch of medicine. The book will be handsomely printed, and, as the subject demands, profusely illustrated. The illustrations will be largely original, having been prepared by the author or under his immediate supervision.

— E. B. TREAT & Co. are about to issue the 1898 volume of the "International Medical Annual."

— Dr. G. Archie Stockwell, F. Z. S. (A. M. C., 1866), for ten years the confidential medical adviser of Parke, Davis & Co., Detroit, has severed his connection with that firm and is now engaged in the same capacity with Henry K. Wampole & Co., of Philadelphia.

Dr. Stockwell also severed his connection with the *Medical Age* in December last, and will probably soon issue a new high-class and wholly independent medical journal that will be entirely separate from his connection with the Philadelphia house.

— Dr. Flavius Packer (A. M. C., 1893) has been appointed first assistant physician at the Long Island State Hospital, Brooklyn, N. Y.

— Dr. H. C. Evarts (A. M. C., 1873) has been appointed medical superintendent of the Long Island State Hospital, King's Park, N. Y.

Book Reviews.

A Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, M. D., LL. D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia, etc. Third Edition, revised and enlarged, with chromogravure plates and other illustrations. New York: D. Appleton & Co., 1897. Pages, 894.

It is five years since the second edition of this work made its appearance, and in the interim two other volumes on the subject by American authors have made their appearance — Morrow's, in 1894, the third volume of whose work is devoted to this branch of the subject of *Genito-Urinary Diseases, Syphilology and Dermatology,* and makes a book of nearly 1,000 pages; and Hyde's, whose fourth edition appeared earlier in this year, and contains about 800 pages. The size of these volumes indicates somewhat the amount of material necessary to adequately treat a subject which, in the work being done upon it in later years, is growing more exact in definition and in etiology, pathology and treatment *pari passu* with other brandies of medicine. They illustrate also the quality of the contribution to this subject which American workers are making.

This latest issue from the press is a painstaking effort on the part of the author to epitomize, for no volume can attempt more, the latest material of current literature, which during recent time has become voluminous. Bacteriology has opened new sources of knowledge of various affections, and disease processes have received new conception by more accurate study of pathology.

The book opens with chapters on the anatomy, physiology, symptomatology, pathology, etiology and general principles of treatment of diseases of the skin. Recent matter is to be noted under "Physiology of the Skin" in sensation and nerve distribution, and the effect of the same on the functions of this organ; also on cutaneous temperature and absorption. In the chapter on "Treatment" newer remedies are mentioned, which it is to the advantage of the general practitioner to find, and there is much that is suggestive. A fuller text might well have been included. Massage and its use for the skin receives a page, and electricity five pages in this chapter. .

The author follows the old classification of Hebra, and wastes no space on the many other methods proposed; this is well, for this general plan of associating related diseases is the most practical and simple, however it may be theoretically criticised.

The bulk of the volume is taken up with description and treatment of the various diseases of the skin. The description of diseases and the picture presented by them is generally quite satisfactory. It is an art to be cultivated by writers on this subject to depict without confusion and clearly the features presented to the eye and touch of diseases of the skin, only born of a habit of close observation. In this edition there are twelve illustrations in color, of full-page size, and they are a material aid most of them, though not evenly so; some of them are admirable, a few misleading. There are also a considerable number of wood cuts in the text.

Perhaps the volume will be best appreciated for its contribution to treatment. On this it is quite full. The newer medicinal preparations are brought in, and of these there are some added since the last edition, which have been included. It seems generally sufficiently satisfactory on this part of the subject.

The volume contains the more recent conclusions in pathology, and the results of investigations in bacteriology so far as they relate to the skin.

The book is gotten out with attention to typographical taste, and is attractive in its appearance. We commend it to the general practitioner as instructive and up to date, containing what it has to say on the subject it treats of in fairly condensed form, and furnishing a trustworthy guide to the study and care of diseases of the skin. F. C. C.

Diseases of the Stomach. Their Special Pathology, Diagnosis and Treatment, with Sections on Anatomy, Physiology, Analysis of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By JOHN C. HEMMETER, M. B., M. D., Philos. D., Clinical Professor of Medicine at the Baltimore Medical College, Consultant to the Maryland General Hospital. Philadelphia: P. Blakiston, Son & Co. Pp., 788.

No stronger evidence of the progressive work of the American physician is needed than the appearance of this most complete and thorough work upon a division of medicine opened up to scientific investigation by Leube only a few years ago, and to-day hardly out of its embryonic stage. The aim of the author — to furnish a work which would contain all that has been done in this special field of medicine — has been satisfactorily accomplished. The author divides the subject-matter into three parts — the anatomy and physiology of the digestive organs and methods of diagnosis; the therapy and materia medica of diseases of the stomach; the consideration of gastric diseases.

In part first, after a review of the anatomy and physiology of digestion, one hundred pages are given to the various methods employed in the examination of the stomach contents. He gives at some length the result of his own original experiments to determine gastric peristalsis by means of a rubber stomach-shaped bag connected with a manometer on the Ludwig kymographion. Among the tests for free hydrochloric acid he gives the preference to the one recently introduced by Töpfer — the dimethyl-amido-azo-benzol test — on account of its simplicity and ease of application for quantitative purposes. This section closes with a chapter on gastroscopy, directions as to its use and deductions as to its value.

Part second has been made most practical by a very complete consideration of the dietetics of gastric diseases, the use of lavage, electricity and massage, and the value of the various mineral springs in the United States. Separate chapters are devoted to the surgical treatment of gastric disease, to the influence of gastric disease upon other organs, and to the condition of the blood and urine in diseases of the stomach. This brief synopsis indicates the thoroughness with which the reader is brought up to the third section, which deals with the diseases of the stomach. Two chapters of this section are devoted, one to the infectious granulomata, tuberculosis and syphilis, and the other to benign tumor — subjects, the first on account of its unimportance in comparison with the general conditions, and the second because of their great rarity, which hardly seem to merit such space in a text-book. The subject of enteroptosis and gastroptosis, at present receiving so much attention, is given full consideration. The practice of tight lacing receives the blame for this condition, while abdominal gymnastics and a properly fitted abdominal bandage are the therapeutic indications.

The neuroses of the stomach are made the most important part of this section. They are classified as motor, sensory and secretory, and each varying phase is most fully considered. After each chapter is placed the complete bibliography of the subject treated, consisting in some cases of over one hundred references.

The work is in every way highly creditable to the author and the publishers.

Manual of Bacteriology. By ROBERT MUIR, M. A., M. D., F. R. C. P. Ed., Lecturer on Pathological Bacteriology and Assistant in Pathology, University of Edinburgh, and JAMES RITCHIE, M. A., M. D., B. Sc., Lecturer in Pathology, University of Oxford. 519 pages. The Macmillan Company, New York.

The science of bacteriology has within recent years progressed with such rapidity and become so extensive that text-books upon this subject soon, in a large measure, fail to serve their purpose, and consequently no longer meet the demands of either special workers in these fields of research or of students seeking elementary instruction. This has caused a demand for new books, and particularly for manuals containing the recent scientific acquisitions expressed in the tersest language.

The book, the subject of this review, belongs in the strictest sense to the latter class. In the preface the authors assert that the manual is essentially intended for students and practitioners of medicine, and that their chief endeavor has been to render the work of practical utility for beginners. Bacteriology has evolved into such an extensive field that in treating a subject of its kind in a book this size, the work must necessarily be restricted to some special departments, unless the descriptions are to be of a superficial character. Accordingly, as the book is primarily intended for students and practitioners, only those bacteria have been considered which possess in a more or less marked degree pathogenic properties. The etiologic relationship of microörganisms to processes of disease is clearly discussed.

The book is divided into nineteen chapters, the first five of which are taken up with a discussion of certain general and technical features pertaining to the science. In the account of the more important methods, attention has been directed to many elementary details which the experience of the authors in the practical teaching of the subject has shown to be necessary. The remaining chapters, with the exception of the last, are devoted to the bacteriologic considerations of specific microörganisms, with some reference to their relations to specific diseases. The last chapter is an excellent exposition of the prevailing theoretic problems of immunity. Appended to the book are thirty pages which are devoted to the consideration of the bacteriologic aspects of small-pox, hydrophobia, malaria and dysentery.

The list of biblographical references at the end of the book is sufficiently complete, and will be of inestimable value to the student of this division of biology.

In the description devoted to the bacillus pyocyaneus, allusion is made to the experimental lesions which the microörganism is capable of producing, but no reference is made to the etiologic relations of the bacillus to certain various pathologic processes in the human subject. The occurrence of pus production without bacterial intervention and the confirmation of its existence by experimental evidence, have not received much elaboration. It is true that the question resolves itself into one of more theoretic than practical importance.

Tuberculosis is, beyond all peradventure of a doubt, treated in a most scientific manner. It is a lucid presentation and résume of our knowledge upon many important points of mammalian and avian tuberculosis. The chapters upon typhoid fever, diphtheria and pneumonia are likewise excellent. On page 481, under the heading of the quartan parasite of malaria, we read: " The parasite passes through its cycle of development in twelve hours," etc. The mistake is probably referable to a typographical error.

The binding and paper are good, type clear, and the photographs and photomicrographs used in the systematic description are admirable. The general plan of the book is good, and for a text-book of its kind it is unexcelled, and commends itself to all students of bacteriology.

AUGUST JEROME LARTIGAU.

Elements of Latin. For Students of Medicine and Pharmacy. By GEORGE D. CROTHERS, A. M., M. D., Teacher of Latin and Greek, St. Joseph, Mo., and HIRAM H. BICE, A. M., Instructor in Latin and Greek, New York City. 12mo. Pages, xii-242. The F. A. Davis Co., Publishers, Philadelphia.

This little work is of special value to the student of medicine or pharmacy who has not had a thorough course in Latin. A careful study of such a book previous to one's college entrance would prove more satisfactory to the prospective medical student than the usually required Latin course, and would pave the way to a clearer apprehension of the complex words and phrases which at first bewilder the student, and which take half his time to comprehend.

The chapter on prescription writing might well be studied even by the Latin student, who would certainly be pleased to find, after several years' study of the *subjunctive,* a Latin work in which that mood is used in only one sense.

The notes on the exercises are clear, and contain much valuable information; and while the chapter on " Anatomical Proper Names and Their Origin " is of interest, it might be more properly placed for reference in an anatomical or physiological work. H. JUDSON LIPES.

Current Medical Literature.

A Modification of the Operation for the Relief of Ptosis. — By Dr. E. Landolt (*Trans. by C. M. Culver*). Heretofore we have performed the ptosis operation in the way whose description follows:

1. Incision about four millimetres above and parallel with the border of the lid.

2. Loosening of the external or cutaneous layer up to the orbital border.

3. Introduction, into the lower lip of the incision, on the tarsal cartilage, of three threads, each armed with two needles.

The two ends of each thread come out about six millimetres apart. These two ends of the thread are carried between the layers of the lid and brought out above the eye-brow (AB, fig. 1). By drawing these taut the eye-lid may be raised as much as is desired. The threads being tied with a cravat knot, as de Wecker has recommended, over a pad of absorbent cotton, it is easy to tie or untie them, afterward, at will, hence to modify the effect of the operation.

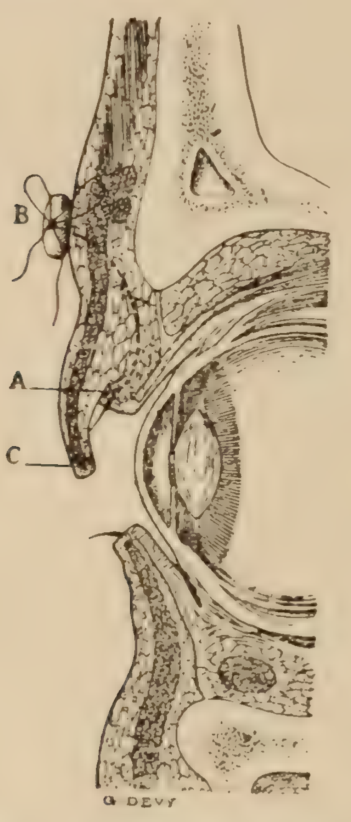

Fig. 1.—AB. Suture raising the lid. C. Cutaneous layer of the lid.

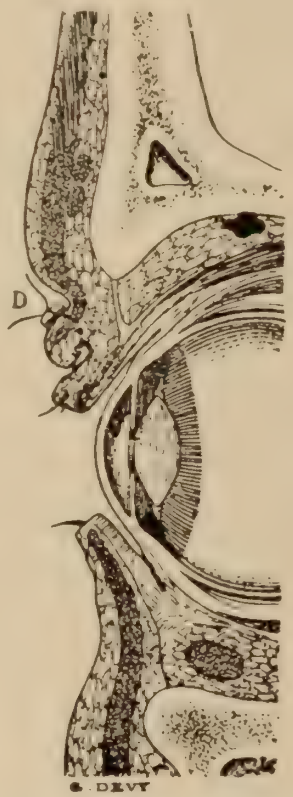

Fig. 2.—CD. Suture folding the cutaneous layer on itself.

After the operation, the cutaneous layers (C, fig. 1), limited below by the upper lip of the incision, extends farther, of course, than the ciliary border of the lid, as long as the latter is kept raised by the sutures. It generally shrivels of itself, its freshened edge taking nearly its former position and coming to adapt itself to the lip of the incision, which limits, above, the ciliary border.

We have found, however, that this strip of skin, left to itself, did not always offer sufficient guarantee of the success of the operation. If the lid be raised slightly enough for the insertion to take place spontaneously, as was just said, the ptosis is not, in the majority of cases, sufficiently corrected. With a more energetic raising, on the contrary, the possibility of the cutaneous strip shriveling is eliminated. It remains in place, swells, its freshened surface becoming covered with granulations and its edge nearly overlapping the ciliary border, even after the suppression of the sutures.

In order to avoid this annoyance and, at the same time, to give the lid a more graceful form, we raise the cutaneous layer by a special row of sutures, analogous to those that raise the deep layer (CD, fig. 2). Both rows of sutures may be put in place at the time of the principal operation. I believe, however, that it is better to defer the placing of the sutures of the cutaneous layer till a later time, when the cicatrization of the deep layer is sufficiently advanced to permit the removel of the threads that hold it and so make practicable the estimation of the real effect obtained by the operation. Then one has, in the external layer, a valuable means of increasing the effect, if it prove to have been insufficient, or to diminish it if it has exceeded what was wanted.

In the former case a band of the edge of the cutaneous strip will be sacrificed or, if necessary, the palpebral sutures may be put in place a second time, along with the cutaneous ones.

In the second case a bit of the scar which holds the deep layer up may be loosened with a bistouri and the freshened border of the cutaneous layer may be inserted in the same place.

As a matter of course the tissue of granulations which has developed on the surface of the cutaneous layer will be removed.

This method of operation has given extremely satisfactory results, with reference to both the raising of the lid and the æsthetic aspect of it. The specially undesirable feature of ptosis, even after the performance of the usual operations for its relief, is the absence of the folds, parallel to the lid's edge, which contribute so much life and expression to the normal lid. The lid, deprived of the action of its levator muscle, hangs flaccid and inert before the eye, even when it does not hide the eye-ball.

The suture of the external layer, which is above recommended, restores these folds and, with them, the aspect of the lid becomes natural again.

The two schematic figures will suffice, I hope, to furnish what this brief note might leave uncertain in the readers' minds.

The Chemistry and Pathology of Gout.— Dr. Luff, in *The Lancet* of March 29th and April 3d and 17th, publishes the Goulstonian Lectures on this subject, summarizing as follows:

1. Uric acid is not normally present in the blood of man and other mammals, nor in the blood of birds. 2. Uric acid is normally produced only in the kidneys. 3. Uric acid is normally formed from urea, probably by conjugation of that substance with glycocine in the kidneys. 4. Uric acid is present in the blood in gout as the soluble sodium quadriurate In its soluble form it is not a toxic agent. It deposits from the blood as sodium biurate, which acts passively and physically as a foreign body in the tissues or organs in which it is deposited. 5. The presence

of uric acid in the blood in gout is due to its deficient excretion by the kidneys, and to the subsequent absorption of the non-excreted portion into the blood from those organs. 6. Gout is probably always preceded by some affection of the kidneys, functional or organic, which interferes with the proper excretion of uric acid. The probable seat of the kidney affection giving rise to gout is in the epithelium of the convoluted tubes. 7. In certain blood diseases and disorders accompanied by leucocytosis uric acid is formed within the system from nuclein. Under such circumstances it passes at once into the blood, and is rapidly eliminated by the kidneys. 8. The solubility of uric acid in the blood is not affected by a diminished alkalinity of the blood produced by the addition of organic acids. 9. The deposition of sodium biurate is not accelerated by a diminution of the alkalinity of the blood. 10. An increased alkalinity of the blood does not increase the solubility of deposits of sodium biurate. 11. The saline constituents of vegetables exercise a remarkable inhibitory power over the decomposition of sodium quadriurate. 12. The solubility of sodium biurate in the blood is increased by the presence of the saline constituents of vegetables. 13. The solubility of sodium biurate in the blood is diminished by the presence of the saline constituents of meat. 14. The gout-inducing properties of certain wines are not due to their acidity. Probably they owe their gout-inducing action to the effect they exercise on the metabolism of the liver.

Dyspeptic Albuminuria. — *(Gazette des Hopitaux, August 19, 1897.)* Dr. Robin, after reviewing the work of Gubler and Semmola upon functional albuminuria, divides these into those of hepatic, nervous and alimentary or dyspeptic origin. It is of this latter variety that he writes.

According to Robin, albuminuria of dyspeptic origin is extremely frequent, since out of 1,610 cases of dyspeptics, 300 had albuminuria. This albuminuria has certain features which distinguish it not only from the albuminuria of Bright's disease, but also from that of either the nervous or hepatic origin. It is characterized by certain gastric and urinary symptoms both objectively and subjectively. In the presence of dyspepsia always examine the urine. The appetite is usually preserved, at times even augmented; there is variable distension of stomach, characterized by clopatage. The liver is generally enlarged; constipation exists. Chemical examination of gastric contents reveals free H Cl and albumen. The subjective symptoms presented by this class of patients are great sensation of weakness, pallor, never œdema of feet, of eyelids, and certain nervous symptoms. The presence of albumen in urine is irregular or continued, and when present always small in amount, and the albumen is subject to considerable variations, depending on mode of alimentation. This fact is very important from a therapeutic point of view. Casts are not found in urine. When patients are placed in bed albumen disappears immediately.

Concerning the cause of this albuminuria, Dr. Robin disputes the toxic theory, for, he says, were it due to the presence of toxines their presence would be detected in stomach. M. Robin instead believes that the presence of albumen in the stomach liquid and demonstrated, after test, merely acts as a foreign substance. It is the passage into the urine of the alimentary albuminuria. It is a true foreign substance in the body and eliminated by the kidneys. The albuminurias always get well under treatment when treated in time; otherwise, if allowed to go, they pass on to Bright's disease.

The milk diet is the most successful, and during this period patient is to be placed in bed. A. J. L.

Antitetanic Serum. — *(Gazette des Hopitaux, July 29th, 1897.)* By Dr. Nocord. Since April 1st, 1894, up to June 1st, 1897, Nocord distributed 7,000 vials containing 10 c. c. of antitetanic serum. About 3,500 animals received each 10 c. c. of the serum; 2,707 of these animals were inoculated preventatively, and not one of them suffered from tetanus; 2,303 animals received the serum just before some operation, and in no case did an animal suffer from tetanus; 400 other animals received the inoculation subsequent to some injury where tetanus was feared, and in only a single case did the tetanus appear. This case was one of a horse which received the inoculation five days after the accident, and the disease was much attenuated by the serum.

To fully impress the importance of the use of the serum and also its efficacy, the writer cites the case of a veterinarian who could not perform a single castration in his infirmary where a tetanic horse had died without losing them from tetanus. He then tried the serum before each castration, and was able to report 103 consecutive cases of castration without a single case of tetanus.

Nocord concludes by affirming the absolute efficacy of this antitetanic serum. A. J. L.

The Treatment of Ataxia by Elongation of the Cord (Gilles de la Tourette and Chipault, *Le Progrès Médical, 18 December, 1897*). — The therapeutic method is based on certain anatomical researches, by which they were able to determine that by means of forced flexion of the vertebral column elongation of the cord was effected to the extent of 2 c. m. In a previous report the writers had already mentioned their results of this treatment on 47 ataxic patients; 22 of these showed very marked amelioration of every symptom and 15 others of some of their symptoms, and in 10 no benefit could be observed. In the present report 21 cases have been submitted, which were treated from July until November, 1897. Seventeen of these had markedly improved as a result of the treatment. The improvement was particularly observed in the genito-urinary disorders and motor incoördination. According to the writers, every ataxic case is not suitable for this mode of treatment. Cases not suited for the treatment are cachectic ataxic individuals, those in whom the disease follows a slow evolution, those subject to laryngeal crises, as well as patients in whom the manifestations are limited to the ocular apparatus in the form of paralysis of muscles. All the above-named cases should be eliminated from the start. A. J. L.

Extra-Uterine Pregnancy.— Robson, in his presidential address before the British Gynæcological Society, considered this most important subject (*British Medical Journal*, January 29, 1898). The greater number of his cases were acute, *i. e.*, the rupture took place into the peritoneal cavity before the twelfth week, and death would have occurred from hemorrhage if they had not been treated surgically. The next most frequent class is the subacute. Here the bleeding is arrested by plastic peritonitis, forming a more or less considerable pelvic tumor. These cases may be difficult to diagnosticate, unless the history is carefully taken.

In all the acute cases there was no difficulty in making a diagnosis. The symptoms were pathognomonic — sudden pelvic pain, followed by faintness, even extreme collapse; the history of one or two missed periods; usually slight metrorrhagia, with at times the passage of decidual membrane. On pelvic examination the uterus was usually found tilted over to the normal side and a doughy swelling felt at the site of disease.

The special symptoms of this condition are:

1. Superficial dullness on percussion over the pubes and in either flank, resonant on deeper percussion.
2. A thrill in the same region on gently flicking with the finger nail, though no ordinary sign of fluctuation can be felt.
3. On turning, the dullness in the flank then uppermost persists for some little time, then gradually disappears. This is never found in the case of any other fluid than blood in the peritoneal cavity.
4. In one case the liver dullness had entirely disappeared, owing, apparently, (*a*) to the liver having become diminished in size from the loss of blood, and (*b*) to the bowels having been pushed up by the effusion of blood in the pelvis.

In nearly all cases there was dysmenorrhea for some time before, and in several the pain led the patient to seek advice before the rupture occurred.

Of the twenty-three cases one died, the result of an accidental death — pulmonary embolism. In three cases the patients were pulseless at the time of the operation. If there be any doubt in diagnosis, it is always best to make a small exploratory incision.

The Pituitary Body and Thyroid Gland in Modern Therapeutics. — The *Gazetta Degli Ospedali*, in an editorial, advances the theory that the pituitary body has an influence in acromegaly. It is a ductless gland whose secretion is necessary for the conservation of the organic equilibrium. In structure it is follicular and contains colloid material. Histologically the two bodies are almost alike. Experimental thyroidectomy in rabbits is followed by an increase in weight and volume of the pituitary body, due to a hypertrophy of the organ, especially its grandular element. On this ground the hypothesis has been advanced that in some races of animals the pituitary body is vicarious to the thyroid. Again, as in the thyroid, iodine is found, which, with the exception of the thymus gland, is found in no other structure of the body. Myxœdema occurs with notable hypertrophy of the pituitary body. Acromegaly is often preceded by myxœdema; in fact there is a group of authors who believe that the pituitary body never is the original seat of acromegaly, but that it is affected secondarily to the thyroid.

Pituitary body administered to patients suffering from acromegaly (Merck's tablets) was followed by an increase of 16% in the phosphorus excreted. There was no modification in the amount of nitrogen eliminated, showing that tissue had been destroyed which was poor in nitrogen and rich in phosphorus. The tissues affected, therefore, were the nervous system with its lecithin, and bone with its phosphoric basis. The tissue affected, however, is probably bone.

Iodothyrin and thyroid substance do not act alike, five to six grammes of the former having no effect, or only a slight one, and one-half of the latter producing an effect. As results of experiments it is found that the pituitary body and the thyroid contain a substance acting on tissue changes, especially on phosphorus compounds (bones). Thyroid substance and iodothyrin are not interchangeable. W. H. H.

Practical Therapeutics.

Abortive Treatment of Acute Coryza.— Courtade considers the hot nasal douche the best method to abort acute coryza; the water must be very warm (50° C.), and slightly alkaline. Under the influence of the douche, which is easily borne at this temperature, the congestion of the mucous membrane diminishes, the discharge stops, and the headache disappears.

The patient is given a powder of five grains of phenacetine and five grains of Dover's powder; he is then put for ten minutes in a hot bath, is given a hot lemonade or hot punch, and wrapped in woolen blankets, so as to perspire as much as possible. In a half-hour he is given another five-grain Dover's powder and five-grain phenacetine powder. After the patient has perspired for an hour he is rubbed dry. He should remain in bed until the next morning. — *H. B. Whitney, Internat. Centralbl., January, 1898.* C. F. T.

The Choice of Mercurial Treatment. — Fournier, in the *Semaine Medicale, No. 31, 1897,* gives his opinion as to the value of the various methods of mercurial treatment. By mouth the method is simple, in the majority of cases well borne by mouth and digestive tract, and it is moderately effective. The inunction treatment has the following advantages: It is very effective, spares the gastro-intestinal tract, and allows the stomach to receive other drugs, as iron, arsenic, cod liver oil, etc. It has these disadvantages: It is dirty and inconvenient, cannot be hidden, has unequal results because unequally carried out, and easily induces stomatitis. The daily injection of soluble mercurial salts has the following advantages: They are effective, they spare the stomach and intestines, and they thus allow other remedies to be administered by mouth. There are the following disadvantages: They produce pain and swelling at the places of injection, and, as treatment covers a long period, it is difficult outside of a hospital. The injection of insoluble salts at intervals is the most effective, but they produce stomatitis and local disturbances. In 400 calomel injections there were severe pains in three-fifths and almost unbearable pains in one-fifth of the cases. His conclusions are that the lighter cases should be treated by internal medication, the more severe by inunctions and the most severe by injections. To the latter belong the tuberculo-ulcerous syphilide, the widespread gummata, malignant syphilis, the phagadænic form and laryngitis gummatosa.

The social position, occupation, condition of digestive tract, the need of the administration of other remedies, and whether the endeavor is to cause present symptoms to subside or to combat the constitutional poison should all have their influence in the choice of treatment; also the experience of the patient himself, if he has gone through previous treatments. For prolonged treatment the administration by ingestion is the most satisfactory, because it is simple and convenient, and in medium doses spares the stomach and intestines. The medium doses, too, are better for prolonged treatment than the larger, which cannot be employed for long periods. It produces no disagreeable effects as do the inunctions and injections, and does not affect any social or professional duties. The glossitis desquamativa is most quickly healed by injections (calomel once a week). Pregnant women and children bear inunctions better than pills. Glossitis hyperplastica, old tubercular syphilides, tertiary visceropathies and ophthalmias are better treated by inunctions.

Aristol—Its Therapeutic Value.—Aievoli (*Therapeutische Monatshefte, January, 1898*) treated with aristol fifty cases — eighteen suppurating wounds, thirteen varicose ulcers, five burns of second and third degree, and the remainder boils, abscesses, etc. He used four to ten per cent. of aristol with vaseline, lanoline or olive oil as the base. In the suppurating cases there was an immediate diminution of the secretion and a rich development of granulation cells. In varicose ulcers, as is usually the case, the results were unequal, and in tubercular adenitis there was no greater tendency to improvement than by the use of emulsions of iodoform. In burns and frostbites the curative and sedative action of aristol was especially marked.

The Use of Tannalbin in Children.— Wyss, in cases of acute enteritis and gastro-enteritis, obtained prompt action from tannalbin, while subacute forms were cured in a few days. In severe chronic forms of enteritis, especially those of a tubercular nature, it had a slow, but certain, effect. It was also of value in acute and chronic rectal catarrhs.

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TRANSPORTATION OF THE WOUNDED IN WAR.

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The removal of the wounded from the battle-field requires both organization of men and suitable implements for their use. The men and their tools will be considered in this paper.

The first stage in the travels of the wounded man is from the ground on which he has fallen to the collecting or first-dressing station. This station, according to army regulations, is "the nearest place to the combatants where the wounded and those caring for them may not be unnecessarily exposed to fire."[1] Formerly this was a distance of not more than five or six hundred yards, but the increased range of the modern rifle now necessitates the establishment of the first-dressing station at least one thousand to twelve hundred yards behind the firing line. There is usually one such station behind each regiment engaged, or if the regiments be small, one behind each brigade. To these stations bearers carry on litters the seriously wounded, after they have received on the field the necessary first aid, such as the application of a tourniquet in cases of severe arterial hemorrhage, and of improvised splints to broken bones.

The bearers are a part of the sanitary force, which varies somewhat in strength in different armies, but is commonly equal to about four per cent. of the troops in line. In some of the European armies in which the proportion was less than four per cent.

the rate has recently been increased, because of the general belief that in future wars the number of wounded will be larger than heretofore by reason of the greatly extended range of the new rifle. In our own army no definite plan has yet been formulated for fixing the ratio of the sanitary to the combatant force. If, however, we assume that the sanitary force is equal to four per cent. of the command, a division — the administrative unit of an army, which in our service numbers, on a war footing, 12,747 men — will contain in round numbers a sanitary corps of five hundred men. This corps in most armies is composed of two classes, about equal in number — the hospital corps, which consists of men specially enlisted for the medical department and permanently attached to it, and the company or regimental bearers, who belong to the fighting force, and have been instructed in the duties of litter bearers and in the methods of giving first aid to the sick and wounded. During an engagement these bearers are temporarily detached from their companies for sanitary service with their respective regiments; that is, to give necessary aid to the wounded on the battle-field, and to carry the disabled to the first-dressing stations. At the dressing stations and beyond, the wounded are cared for by men of the hospital corps.

The plan of taking men from the combatant ranks to serve as litter bearers is disapproved by some authorities, and the question is still an open one. Those who favor the plan argue that if there are no company bearers it will be necessary to make the hospital corps much larger than ordinarily required, in order that it may be strong enough to meet the emergencies of the battle-field, and that between battles there would thus be a large force of idle men.

Those who disapprove the system of company bearers say that officers in command of troops will be unwilling to part with men in the critical hour of battle — the hour which all their previous training has led up to. Furthermore, that if the force be composed of both combatants and non-combatants there would be a mixed control, and the medical officer could not therefore be certain of his men in the time of necessity.

A captain in the line who is dissatisfied with the present system — or lack of system — of providing companies with clerks, suggests as a compromise that the functions of company bearer and company clerk be combined in one man; that he be unarmed, a combatant in name only, and that two men in each company be specially enlisted for this purpose. We believe that a homogeneous corps, at all times under the command of a medical officer, would be much more efficient than the dual force, and that any measure which lessens the usefulness of that part of the service whose mission is to relieve suffering and save life would be an unwise economy. The appropriate place for unarmed men, who are practically non-combatants, is, not the line, but the hospital corps. When not engaged in removing the wounded from the field, their services could certainly be made as valuable in the medical department as they could be in the companies of the line to which they might be attached.

In the organization of the hospital corps for service the men are assigned as follows: some to form the detachments for duty with regiments, some to constitute bearer and ambulance companies, some to serve in the division hospital. The number of men for each of these several duties is not yet specified by regulations.

The medical officers of the division number forty-four.

Having considered the personnel, we now turn to the means of transportation. The first conveyance used in carrying the wounded from the field is the litter. The evolution of the hand-litter is an interesting subject,but we shall consider only its recent development in the United States.

During the War of the Rebellion, and until lately in our regular army, the litter known as the Halstead was in use. This litter was eight feet in length, had folding wooden legs fourteen and one half inches long, and weighed twenty-five pounds. It was a serviceable litter, and only when we contrast it with our present litter do we remember that the old one was heavy; that its legs were unnecessarily long, apt to become loose and unsteady, and to shut up unexpectedly; that its length and legs prevented its fitting into an ambulance, and that every wounded man on the way to hospital must therefore be lifted from litter to ambulance and from ambulance to litter, thereby wasting time and adding to the patient's suffering.

The present litter of the United States Army, model of 1895, weighs sixteen and one-half pounds. It folds compactly, and may be carried on the shoulder almost as easily as a rifle. The fixed wrought-iron stirrup-shaped legs, or rather feet, raise it four inches from the ground. The side-poles are seven feet six inches long, and the canvas bed six feet long by twenty-two inches wide. Two of these litters can be placed side by side in the regulation ambulance. Litter-slings — bands of worsted webbing to be passed over the shoulders and attached to the handles — are issued to the bearers as a part of their equipment, and are very valuable when the loaded litter is to be carried far.

The corps of trained men and the improved litter just described would seem to perfect the means of transporting the wounded to the first-dressing station. But there is still a weak point in the working of our scheme. Experience has shown that when the litters are wanted at the front in action, they are often far away in the rear with the ambulance train, upon which they are carried. Troops, artillery and ammunition wagons have the right of way when battle is imminent, and ambulances and supply wagons must not encumber the roads and must seek a place of safety. Thus it often happens that during an engagement, and perhaps for some time after, the litters are detained miles away from the battle-field. In the French army the regulations governing the sanitary service, issued in 1893, provide that a one-horse cart, containing litters, material for dressings, etc., follow each battalion of one thousand men on the march and into action. Major Havard, referring to this provision, says: "Whether the cart could follow the regiment into action and reach the place finally selected for the station, is very much doubted by competent authorities even in the French army. In this country, where roads are few and generally bad, it would simply be impossible"[3] — a conclusion which we must accept.

It has been recommended that pack-mules be used to bring litters and medical supplies promptly upon the field.[4] In the war with China, 1894 and 1895, the Japanese successfully used pack-horses for this work. The use of pack-animals seems the natural solution of the difficulty, for they can follow wherever troops go without obstructing the movements of the column. Yet if for any reason pack-animals cannot be secured, men of the sanitary force could be required to carry the litters. Under these circumstances, when troops are in the vicinity of the enemy and battle is probable, the bearers should be ordered before leaving the ambulance train to take the litters, one to every four men, and to carry them as they march in rear of the regiment. The light, compact litter now in use is easily carried by two men, and in fact is not an excessive burden for one man; and should the wheeled litter-carrier described below, or some similar device, be adopted, the work would be still further lightened.

At the first dressing station dressings are applied, urgent operations performed, and the wounded made ready for transfer to the ambulance station.

The ambulance station is presumably one thousand or twelve hundred yards beyond the dressing station, established "at some place of security in the rear, or in some convenient building near the field of battle."[1] The site should have a convenient water supply, and if possible it should be easy of access. To this station the wounded are brought in ambulances when practicable. If, however, on account of bad roads, or no roads, or the encumberment of the way by troops and wagons, the ambulances cannot reach the first-dressing station, then litters must be used for the intervening distance.

The ambulance, like the litter, has been evolved from more or less crude beginnings, but it is not yet as well suited to its purpose as is the hand-litter. The pattern now in use in our army, adopted in 1892, carries two patients lying down or eight sitting up. When required for recumbent patients, the removable seats are hung against the sides of the vehicle, leaving a floor space which just holds two litters. The patients are, therefore, carried in the ambulance upon the same litters on which they have been brought from the field. The principal fault of this ambulance, so far as the patients are concerned, is that it is too high, and the joltings of rough roads are thereby exaggerated. It is also too heavy for use on the battle-field, though well adapted to the present needs of our western field service. Moreover, the carrying capacity of the ambulance is too small, as it holds but two recumbent patients, and after a battle the wounded are many and the ambulances comparatively few.

In order to increase their carrying capacity, ambulances have been constructed to hold two tiers of litters for four recumbent patients. Such a vehicle was the Rucker ambulance, used to some extent in the latter part of the War of the Rebellion. The French have two kinds of ambulances, one of which carries two, the other four recumbent patients. The ambulance of the Austrian Red Cross Society, said to be a strong though lightly built vehicle, also carries four litters, two suspended above and two below.

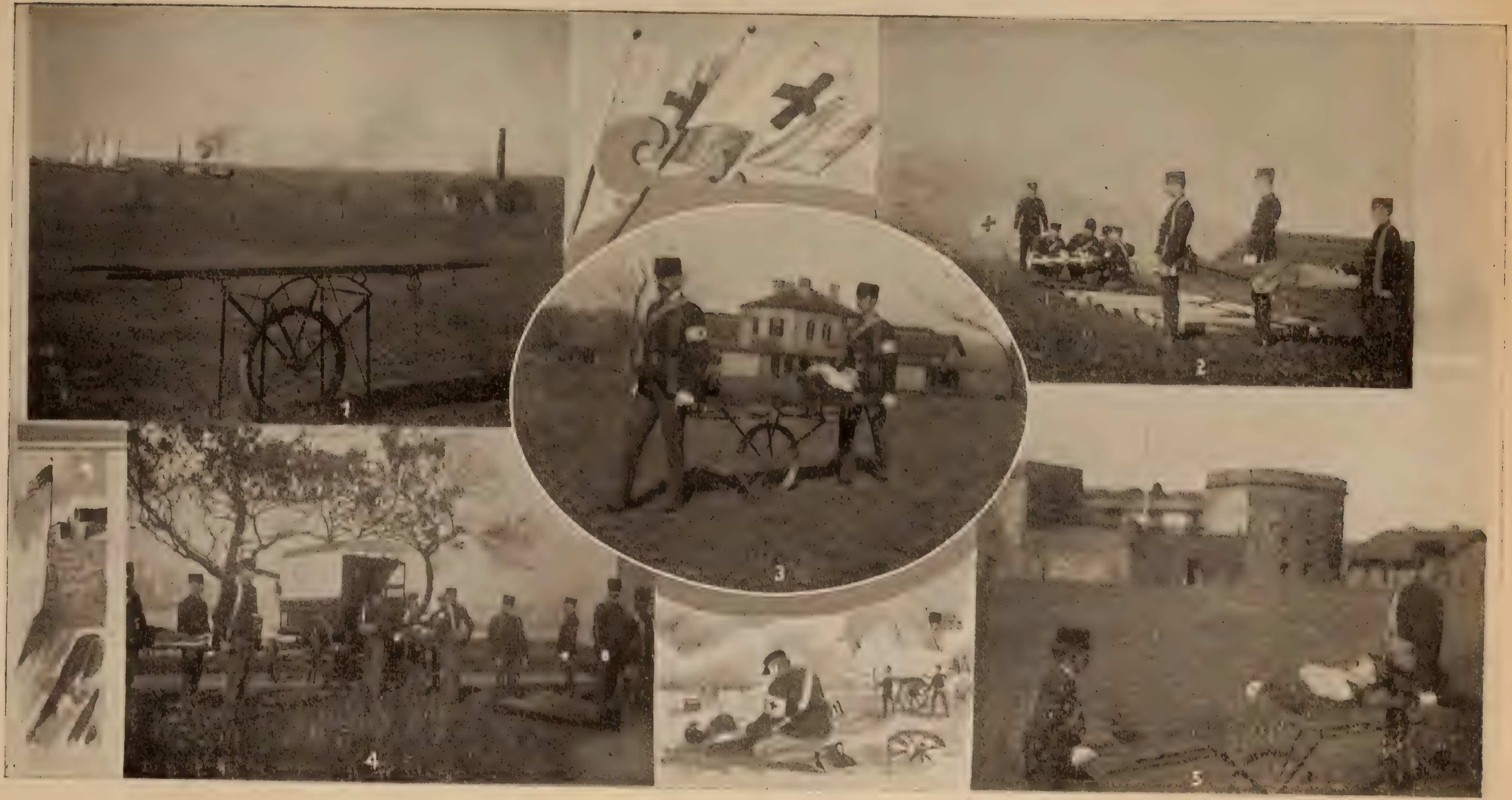
In time of war the need of a light conveyance, which shall hold four recumbent patients, is great, and since it is the part of wisdom in peace to prepare for war, we should do well to exercise our skill and ingenuity in devising such an ambulance.

Wheeled litters, drawn or pushed by hand, have been modeled and remodeled from time to time, but on the chance ground of battle-fields, often rough and broken, these litters have hitherto been of little use.

Attempts have been made to adapt the bicycle to the transportation of the wounded. A device of this character is the "Cycle Ambulance" of the Remington Arms Company. This is made of the framework and wheels of two tandem bicycles placed side by side, and about three feet apart, and connected by a light structure of seamless tubing, upon which is placed a detachable litter. The whole weighs about one hundred and sixty-five pounds, and is propelled by two riders, who occupy the back seats of the tandems. The front seats and pedals are removed. Capt. Theo. E. Lyon, Eighth Regiment, N. G., N. Y., commanding "The Bicycle Company" of his regiment, made trial of this ambulance during a bicycle campaign with his company on Long Island, in July, 1897. He gives the experience of one day as follows: "The ambulance, with about eighty pounds of baggage on the litter, left Creedmoor at 9 A. M., and arrived at Babylon, a distance of thirty miles, at 4 P. M. The riders were tired out, and the tires of the wheels in such bad condition that I decided not to use the ambulance further on the expedition. It had rained hard nearly all day, and the roads were muddy and heavy except over some macadamized portions. On roads like these, and up hills, it was extremely hard work to push the wheels

To Illustrate Dr. Kimball's Article on "Transportation of the Wounded in War."

Albany Medical Annals, April, 1898.



1. Litter in Position on Remington Litter-Carrier.
2. First-Dressing Station.
3. Litter-Carrier on Level Ground.
4. First-Dressing Station.
5. Litter-Carrier Climbing Hill.

along. I also found that under these circumstances there was great difficulty in steering the machine." The "Cycle Ambulance" may prove valuable for use on city streets, but evidently it cannot be considered serviceable for rough and muddy country roads.

A recent invention by Mr. Frederic Remington, the artist, is by far the best adaptation of the wheel to the litter that has yet been made. Mr. Remington, in his campaign experiences with the army on the frontier, has had an eye for the needs of the wounded soldier, as well as for picturesque scouts and warriors. The invention, which he calls a "Litter-Carrier," consists of a single wheel, and of a framework to hold the litter. The wheel is twenty-four inches in diameter, and has a steel rim three inches in width, covered with a rubber band; within the rim is a "V"-shaped shield of wood, through which the spokes pass. The shield prevents the accumulation of mud or snow on the rim. The frame is made of steel tubing, upon which rest two three-leaved springs, placed twenty-two inches apart, so that the poles of the regulation litter may rest upon them. The litter is fastened to the carrier by a pin which is attached to the lower side of each litter pole, and passes through a hole in the spring, where it is made fast by a cross-pin. Folding legs are let down to hold the carrier firmly in position when the litter is to be put on or taken off. The litter-carrier thus adjusted, with the litter placed upon it, is about thirty inches in height, and could serve on occasion as an operating table. When the carrier is in motion, the legs fold back and are secured by a simple device to the litter poles. The wheel is readily detached from the frame, and the whole can then be packed in small compass. The model which I have tested weighs thirty-seven and one-half pounds, but Mr. Remington is confident that the weight can be reduced to about thirty pounds.

The litter-carrier is designed for two bearers, one of whom pulls, while the other pushes; but should one of the bearers become disabled it can be moved by one man alone. Over even ground the loaded carrier is moved with little effort; over rough ground the labor is not excessive, and the broad tread of the rubber-covered wheel and the elasticity of the steel springs make the patient's bed at least endurable, if not wholly comfortable. In case of necessity the carrier and patient can be lifted over ditches or other obstacles. I have tried the carrier under a variety of circumstances, up and down steep slopes, along side-hills, on unpaved roads and across fields, and find it admirably adapted to its purpose. In one of these tests of the litter-carrier a patient weighing one hundred and sixty pounds was carried without stopping a distance of one and one-twelfth miles, mostly over uneven meadow land, in twenty-two minutes, and without fatigue to the bearers. Over the same ground and distance the same patient was carried on a hand-litter in forty-six minutes; eleven minutes of this time were spent in necessary rest, and even then the bearers were very tired at the end of the course. For the long distances from the front to the dressing station, Mr. Remington's litter-carrier promises to be of great value in lightening the labor of the bearers.

At the ambulance station wounds are carefully examined and redressed if necessary, and operations performed as required. Record is made of every patient, and the wounded are fed and cared for until they can be sent on to the field hospital.

The division or field hospital is established at a distance probably two or three miles from the ambulance station, sufficiently far in the rear to assure, if possible, its permanency undisturbed by the changing lines of battle. The water supply and the character of the ground and roads are also factors in determining the site. From the ambulance station to the division hospital the patients are transported in ambulances or by litter-carrier, and on occasion army wagons or other available vehicles are pressed into this service.

Owing chiefly to faulty organization, the removal of the wounded from the field has hitherto been the least satisfactory work of the army medical service. But conditions have changed, and we are now in position to remedy this defect. Formerly medical men performed their duties subject to the will and convenience of other departments of the army. Now the medical department has full control of its men and material, — enjoys complete autonomy in its own sphere. It has a corps of trained and disciplined men and improved appliances for transportation.

As yet, however, a detailed plan for the organization of this force is wanting, and without definite regulations the best results are impossible. To settle the details of organization under the stress of battle requires executive ability which few men possess.

It is held by some authorities that in coming wars it will be impossible to carry away the wounded during the battle, since the bearers would all be killed by the wide and destructive fire of modern arms. Granted that at times this may be so, it does not do away with the need of preparation for the relief of the wounded at the first practicable moment. The value of this preparation does not consist wholly in the actual work accomplished, but also in the confidence given the soldier, that, should he fall, he will be taken care of.

The work of the hospital corps will demand not technical skill alone. It will require military discipline, a training which develops courage, endurance and self-sacrifice, teaches prompt and unquestioning obedience, which, in short, makes a soldier.

In the field hospital the wounded rest for a longer or shorter time, as circumstances or the exigencies of war may decide.

During the War of the Rebellion the wounded were generally sent to hospitals in northern cities as soon as possible after a battle; long journeys by rail and boat were thus made necessary. Many invalids were carried in freight cars, upon bed-sacks, or mattresses, or blankets, which were placed on hay, straw, dry leaves, or pine boughs strewn over the floor. Passenger cars were converted into hospital cars, and as the war progressed special hospital cars were constructed and hospital trains organized, with kitchen, dispensary and store-room. The interior arrangement of the cars varied, but in the main two plans were in use. In one, litters were secured to upright posts, which were placed along the central passageway or aisle of the cars; to these posts on one side, and to the sides of the cars on the other, were attached elastic rubber rings, by which the handles of the litters were held. The litters were placed in two tiers, one above the other, on either side of the aisle. In the other plan the arrangements more nearly resembled the ordinary sleeping-car, the hand-litter not being used. In the subsequent development of the hospital car in other countries, two ends have generally been kept in view — to provide simple fixtures which can be readily adjusted to any car when needed, and to utilize the hand-litter. Cars built exclusively for military hospital service are a costly and wasteful investment; in peace they are not wanted; in war, when wanted they may not be at hand. A method is therefore desirable by which an ordinary car can readily be converted into a hospital car. The use of the hand-litter obviates the necessity of transferring the patient from one bed to another, so that throughout the changes of his journey, whether by car or by ambulance, he remains undisturbed upon his litter.

In the various European countries, fixtures for extemporizing hospital cars are kept on hand in the store-houses of the government or of the aid societies. In Germany the system devised by Grund is in use. It consists of semi-elliptical plate springs, three feet long, which are fastened to the floor of the car when needed and connected by wooden cross-bars. Upon the cross-bars field litters are placed. In Count Beaufort's system, which is practically the same as Grund's, a portable case with springs receives the litter. Coiled springs are also used. These are attached to the top of the car and litters suspended from them. The French make use of a portable iron framework, from which litters are suspended by spiral springs. In Austria iron standards resembling a small bed-room towel-rack are screwed into the floor of the car, and on these standards litters are laid. The elastic rubber ring for suspension, after long trial, appears to have presented insurmountable defects, and to have been abandoned.

Austria is, I believe, the only country which keeps special hospital or ambulance trains ready against the outbreak of war. The trains are constructed and maintained, not by the government, but by the Bohemian Branch of the Knights of Malta, who in Austria still retain the estates of which in most other countries they have been deprived. Each train consists of ten cars for the wounded, a car for the medical officers and the knight representative of the order, a kitchen, a dining-car for the staff and convalescents, a dispensary and two store-cars. The trains are kept ready for the Austrian war office by the Knights of Malta. A definite agreement exists which defines the duties of the order, and the rights of the government.

Railway transportation of the wounded in war has been necessary in the past, and doubtless will be needed in the future. But the interests of the wounded would be subserved if a greater degree of permanency were given to the field hospital. Fortunately it is no longer necessary to hurry patients to the rear, since most of the civilized nations have adopted the code of the Geneva Convention, which neutralizes hospitals and ambulance corps, and gives them immunity from capture. In the treatment of fractured bones, of wounds of the joints, and of the large cavities — of all severe injuries — rest is most important. The surgical history of the War of the Rebellion, if related in detail, would tell of much suffering and of death as the result of long days and nights of travel endured by severely wounded men.

My first army experience was during the summer of 1864, in the general hospital of 1,200 beds at Fort Schuyler, New York Harbor. The wards were filled from the distant battle-fields of the Chickahominy and the vicinity of Petersburgh. A large proportion of the patients arrived with their wounds swollen and inflamed, their bodies wasted by fever, their strength exhausted. Pyæmia was frequent, and here I made my first and only acquaintance with hospital gangrene. As an instance of the exhaustion experienced by these maimed travelers, I recall the case of a soldier who had undergone an amputation of the foot. The boat arrived late at night, and the wounded were at once taken ashore. While on the way to the hospital this long-suffering patient fainted, and when he reached the ward, being apparently lifeless, he was carried on to the dead-house. A little later another body was brought to this place of last resort. As I was about to close the door the light from the lantern, falling upon the face of the man first brought in, showed his eyes open and fixed upon me in mute appeal. He could speak only in a whisper, and his powers seemed utterly spent, but by careful nursing he was brought back to life. Doubtless he could tell a gruesome tale of his fortnight's travels from battle-field to dead-house.

It is perhaps simpler and more convenient to carry patients to distant hospitals than to bring hospitals to patients, but undoubtedly many lives might have been saved by giving to the wounded rest and care near the fields on which they fell. The experience gained during the war showed that the treatment of the wounded in tents throughout the milder portion of the year was attended by the very best results. In winter, in cold climates, there are no doubt disadvantages connected with hospitals of tents, but there are other kinds of shelter, both light and portable, which can be warmed more readily and equably than tents. One devised by Capt. Doecker, of the Royal Danish Army, has been especially commended. It consists of light wooden frames covered with a species of felt, called Carton felt, and lined with canvas.

We have now followed the route of the wounded soldier from firing-line to hospital. Though such a journey may never be painless, yet the measures taken to relieve suffering and to save life have at least kept pace with the inventions contrived to wound and to kill.

GOVERNOR'S ISLAND, NEW YORK.

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For the ANNALS.

WHAT DOES THE RED CROSS OF THE GENEVA CONVENTION SIGNIFY?

BY JOHN VAN RENSSELAER HOFF, A. M., M. D.,

Major and Surgeon, U. S. Army.

Mr. John Furley, one of the most active and experienced members of the British Red Cross Society, says: "There is perhaps only one army (that of Germany) in which men of all ranks possess a knowledge of the convention of Geneva and the meaning of its badge."

If this be true of soldiers, for whom the convention was made and to whom such knowledge is essential, it is not surprising that so much ignorance is found in civil life regarding the convention and its single object.

Judging from the almost universal misuse of the red cross in our country, it must be generally believed that any one can lawfully use it for any purpose, though by common consent it has come to be considered as more especially applicable to hospitals and the personnel thereof, but without regard to their military relation.

Under the terms of the law (the articles of the Geneva convention being now incorporated into our laws), " the red-cross badge has no legitimate significance, except as denoting the personnel and material, both official and unofficial, of the military hospital and ambulance service *in time of war*." Its use at any other time and by any other class is therefore not only illegal, but absolutely harmful to the cause it subserves, for it robs the insignia of its only value by taking away from it the special and clearly defined object of its existence.

It is not necessary to the elucidation of our subject to enter upon a detailed account of the evolution of the red-cross movement, which culminated in the Geneva convention; suffice it to say that the United States, together with all other civilized nations, have adopted the provisions of this convention, and it is our duty as good citizens to see that they are made effective.

In no way can this be more surely accomplished than by protecting the red cross from misuse during peace, and thus preventing it from becoming a cloak to cover all sorts of military irregularities during war.

Fortunately, perhaps, for our country, there has been no war with a civilized foe since we became a member of the Geneva convention; hence it probably is that most of us are ignorant that the red-cross badge may be so abused as to deprive it of any true significance and render nugatory the good which, under proper regulation, it might accomplish.

So much a part of commercial life has the red cross already become that the petition of the American society to Congress to protect the badge of the convention, has thus far met with no response, and Clara Barton was forced to acknowledge before the recent international conference, held in Vienna, " that in our own enlightened country there are 284 persons, corporations and firms who are using the name and sign of the red cross as a trademark for private gain, and that there are innumerable bodies of people here who have founded Red Cross societies for local purposes, and who are in no way connected with the general organization. It was sad to confess that up to this time the American Congress had passed no law for the protection of the sacred emblem of humanity, and taken no steps to keep it from being degraded."

If, as the foregoing would indicate, the misuse of the red cross is to-day so general with us as to practically rob it of any significance, what will happen when war comes and we then attempt to confine its use to the legitimate object of its creation?

The experiences of other armies are sure to be repeated in ours, and it may even be with us as at one time during the Franco-German war it threatened to be there, that the entire Red Cross organization, both national and international, would be paralyzed by its use for unlawful purposes. The badge has been made to cover the spy and the thief, and it has been used to cloak minor military crimes too numerous to mention.

One day in August, 1870, a company of about 300 persons landed in a body at Havre, France, and announced themselves as the Irish Ambulance. When next heard of this so-called ambulance had doffed the red cross and joined the combatant ranks.

During this same Franco-German war a commercial traveler, wishing to reach the German army headquarters, with an eye to business, assumed the red cross and went through. Of this case Longmore remarks that the badge had no real value, as it was without official stamp.

The efforts to obtain immunity from the rigors of war were so common in France that the flag of the Geneva convention was displayed upon many houses in every threatened town, even though no wounded were sheltered therein; and it was a common practice for the denizens of these towns to wear the brassard whenever occasion demanded their venturing out. Under such circumstances it is not surprising that people, ignorant of the true significance of the red cross, should have made use of such an apparently easy means of protection, never realizing, or perhaps caring, that there must be some *quid pro quo* for such protection. But what possible excuse can be offered for its misuse in time of peace? — "a time which should be utilized in spreading correct information as to the true meaning of an international treaty which is of such vast importance to humanity."

Appreciating the importance of the dissemination among the people of a knowledge of the spirit and letter of the Geneva convention, and realizing how serious will be the result of the continued misuse of its badge, the international committee some time since offered prizes for the best essays on "The Abusive Employment of the Red Cross." The successful essayists were both professors of law in Italian universities, and both agreed that an additional "article" should be adopted by all the signatories of the convention making the adequate protection of the red cross obligatory.

The United States signed the Geneva convention in 1882. We were then enjoying, and have since enjoyed, a season of profound peace. During this time ample opportunity has certainly been given the governmental authorities and those of the Red Cross Society, working in unison, to formulate regulations defining their mutual relationship and protecting the red cross.

That such regulations are not yet formulated and such protection given are probably due to a national peculiarity, which constrains us, in the terse language of Mr. Lincoln, from "climbing a fence before we get to it." Quite likely most of us, if we gave any thought to the matter, would acknowledge the wisdom in the abstract proposition that during peace time we should prepare for war; but nevertheless we are apparently quite willing to relegate the concrete preparation to the next generation.

It needs no argument to prove that the military authorities, upon the eve of and during active service, cannot devote the needful attention to the relief societies, while, on the other hand, these societies only then being organized can have no knowledge of their proper relation to the military body. As a result, these really humanitarian organizations have been permitted to become an excuse for much that would not bear critical examination, and which will probably never again be tolerated.

Even our own Sanitary Commission, regarding which Evatt says it was "probably the greatest outcome of national sympathy with suffering the world has ever seen," and whose objects were identical with those of the present Red Cross societies, was not free from defects in organization and execution which seriously threatened its usefulness.

Gen. Sherman's memoirs contain the following significant allusion thereto:

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"For the more delicate and costly articles of food for the sick we relied mostly on the agents of the Sanitary Commission. I do not wish to doubt the value of these organizations, which gained so much applause during our civil war, for no one can question the motives of these charitable and generous people; but to be honest, I must record an opinion that the Sanitary Commission should limit its operations to the hospitals at the rear, and should never appear at the front.

"They were generally local in feeling, aimed to furnish their personal friends and neighbors with a better class of food than the government supplied, and the consequence was that one regiment of a brigade would receive potatoes and fruit which would be denied another regiment close by. Jealousy would be the inevitable result, and in an army all parts should be equal; there should be no 'partiality, favor or affection.'

"The government should supply all essential wants, and in the hospitals to the rear will be found abundant opportunities for the exercise of all possible charity and generosity. During the war I several times gained the ill-will of the agents of the Sanitary Commission because I forbade their coming to the front unless they would consent to distribute their stores equally among all, regardless of the parties who had contributed them."

It would be a comparatively easy matter at this time for us to establish regulations defining the scope of the Red Cross Society in war service. It is almost criminal that this is not now an accomplished fact, for such regulations are absolutely essential to the best results. A lack of them in 1861-65 so hampered our medico-military officials in their attempted control of well-intended, but misdirected, effort, that their work was seriously interfered with. The medical director of the Army of the Potomac, in 1861, reported "that a great deal of presumptuous intermeddling with the medical department of the army occurred from time to time. Sensational preachers, village doctors and strong-minded women, suddenly smitten with a more intricate knowledge and thorough perception of the duties and the administration of the medical department of an army than I had been able to acquire in more than thirty years' experience and study, obtruded their crude suggestions, and marring where they could not make, and paralyzing when they attempted to quicken, succeeded, by their uninformed zeal, innocently enough perhaps, but not the less unfortunately on that account, in defeating measures I had much at heart, had carefully contemplated and intended to carry into effect at the proper time."

Like experiences, under identical conditions, have forced the great continental nations which have had most opportunity to estimate the value of amateur intervention in the management of medico-military affairs, to the conclusion that in future they will not permit such inexperienced and irresponsible activity, but that volunteer services and gifts must hereafter be placed under absolute military authority. In a word, the volunteers of the Red Cross in active service will be as much under military control as any soldier.

From the foregoing we may conclude that if we are to get the best results from war aid societies, without which societies no nation can hope to successfully cope with the epidemic of diseases and injuries which war entails, we must at once begin to educate the public in the plan and scope of such organizations, and the true meaning of " a badge and a name which have done, and can continue to do, so much for humanity."

VANCOUVER BARRACKS, WASH.

For the ANNALS.

THE REPORT OF AN UNUSUAL CONTRACTION OF VISUAL FIELDS AND DISTURBANCE OF THE COLOR SENSE FOLLOWING AN INJURY.*

BY T. F. C. VAN ALLEN, M. D.,

Clinical Professor of Ophthalmology, Albany Medical College.

C. N. — American, aet. 36, by trade a painter, was injured in April, 1893. He was engaged in painting, when a heavy scaffold, some fourteen feet above him, gave way, and he was buried

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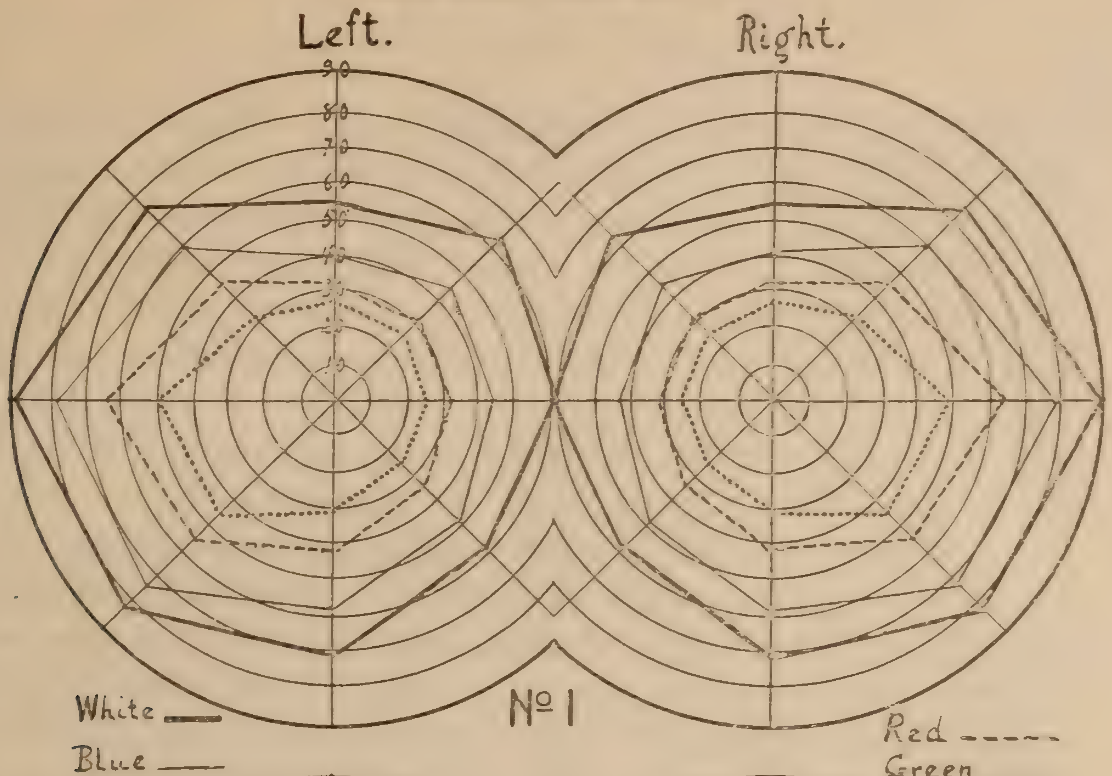
* Read before the Medical Society of the State of New York, January 25, 1898.

To Illustrate Dr. Van Allen's Article on "The Report of an Unusual Contraction of Visual Fields and Disturbance of the Color Sense following an Injury."

Albany Medical Annals, April, 1898.



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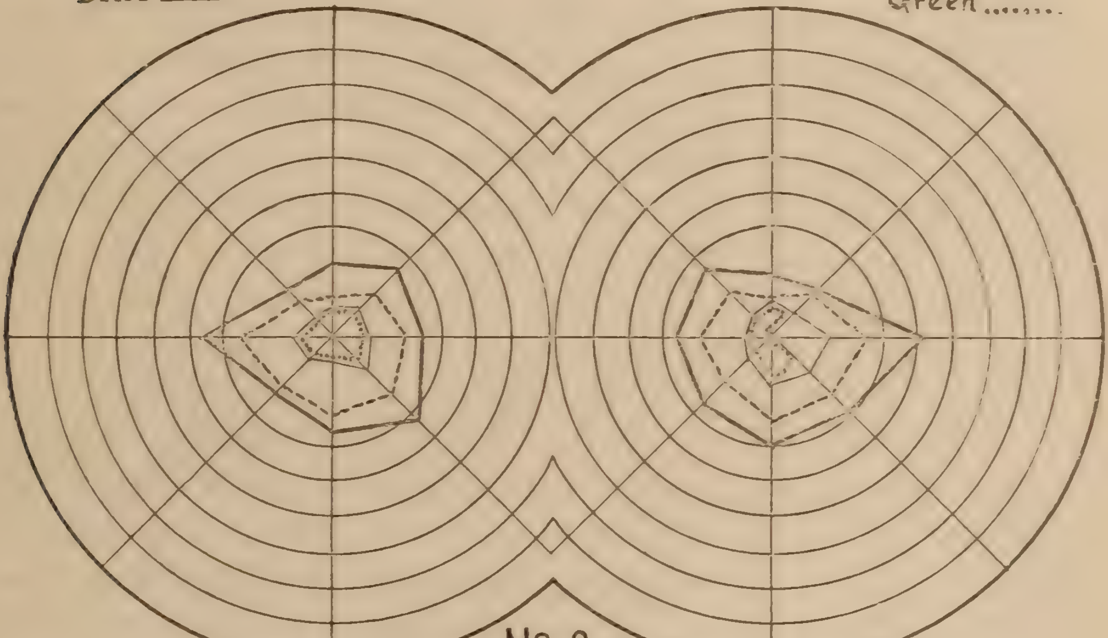

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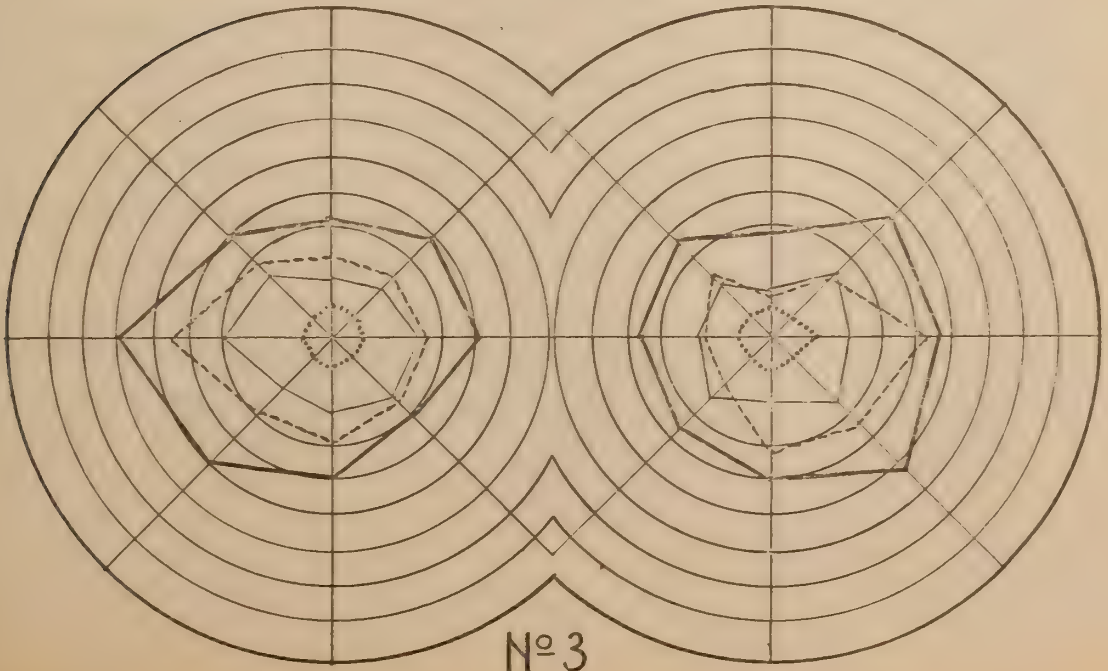

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beneath the timber and planking. His injuries consisted of a dislocation of the right shoulder, a fracture of the right humerus, severe bruising of right leg, several scalp wounds of the right side of head, and a cut on the left side of head at the upper posterior temporal region. There were no evidences of fracture of the skull. The eyelids soon became swollen and ecchymosed on both sides, but when the lids were separated there was no marked ecchymosis of the ocular conjunctiva, and vision seemed good. The patient made a slow recovery. He was able to get out of bed in three weeks. He tried to use his eyes for reading five weeks after the injury, when he found they pained him, and the print became blurred after three or four minutes; he did not at this time notice any impairment of visual acuity. The patient was unable to do any work for five months, and it was one year and nine months before he could accomplish a fair day's work at his trade. He sued the company in whose employ he was at the time of the accident for damages, and his legal advisors sent him to me for the purpose of deciding how much visual damage he had sustained. The history so far given was gleaned from the patient and from the surgeon who had attended him. He came to me October 3d, 1893, about six months after the accident. He had noticed — as before stated — that five weeks after the injury he could read the newspaper but three or four minutes before the print became blurred and the eyes began to pain him. This condition continued, but was not now quite so marked. Some five weeks previously he first noticed that he could not see distant objects as clearly as he once could, the disability being most marked in the right eye. Two weeks ago he first had his attention called to an inability to properly match color; he had commenced painting a door with green, and when he finished the work, after a noon hour's interval, he completed the painting with blue, believing that it perfectly matched the green. When his attention was first called to the blunder, he insisted that the surface was of an unbroken green color, but as he studied it carefully he found there were some lights and some positions in which he could detect the mistake. There was nothing in the family history that had any bearing on the ocular condition. The patient was not a user of tobacco or alcohol; had never had an attack of lead colic or paralysis; stood well with the eyes closed; and the patellar tendon reflex was normal. Inspection showed healthy conjunctiva, cornea and iris on both sides; the pupils reacted normally to light and accommodation. Intra-ocular tension was normal. Visual test showed right eye $\frac{20}{40}$, not improved by lenses; left eye $\frac{20}{30}$, not improved. He could read Jaeger's No. 1 at ten inches with either eye, but tired very quickly. Light sense, as tested by drawing down the window shade and continuing the test on the Snellen letters, was shown to be considerably impaired. The balance of the extrinsic ocular muscles was normal. Ophthalmoscopic examination was negative, save that it was thought that the temporal half of each disc showed a trifle of hyperæmia as compared with the nasal. Wernicke's test showed that neither pupil responded to the reflected light until the mirror was brought within the area of the contracted visual field. The results of perimetric examination evidenced great contraction and disarrangement of the color fields. In regard to any simulation on the part of the patient, it could be absolutely excluded, as he was examined on two different days; the location of the perimeter frequently changed, and he had never had his visual fields tested previous to this time. (Figure No. 1 of the diagram shows the normal visual fields for white, blue, red and green. No. 2 shows patient's fields when tested on October 3d and 4th, 1893.)

Each field was not only tested for its greatest limit, but within its boundaries, for scotomata, and none were found save at Marriotte's blind spot. It will be seen that the contraction of the field recognizing a moving object 12 mm. in diameter was very considerably reduced, and quite symmetrically so. The next field normally is blue; this was very much contracted, so that it was far within the field throughout which red was seen; the red field, while contracted, was less affected than any. The field for green of the left eye was much like that for blue, but with the right eye green was not appreciated at the fixation, but was called blue until it entered such an area as is represented in the chart. The color tests were made with small pieces of paper, both of 12 mm., and 5 mm. square, attached to a hard rubber rod. If the patient were given a sheet of blue paper he recognized it as blue with either or both eyes. If handed a sheet of green paper he hesitated and generally called it another shade of blue; this when he had both eyes open; if he moved the paper toward his left side until the bridge of the nose shut out the right eye, then he recognized it as green; if he moved it toward his right side until the left eye was similarly excluded, the green became blue. He could tell the color correctly when the right eye was covered, but could not when the left eye was, unless he fixed eccentrically.

The fields of vision vary considerably with the individual and with the manner of testing. The proportions of color fields vary in extent, but in the normal eye the arrangement of blue, red and green does not change, though red may occasionally approach quite near to blue in extent. The failure of color perception in atrophic cases is first for green, then for red and last for blue and yellow. The central scotoma for green is a well-known diagnostic point in alcoholic and tobacco amblyopia. In the case reported the optic discs had no appearance of atrophy, and alcohol and tobacco as causal factors could be excluded. The peculiar field for green in the right eye might suggest a central scotoma for green, added to the contracted green field, but this could scarcely be proved.

The writer has nothing new to offer in the elucidation of that obscure subject, color perception, but simply reports a rather rare case. The opinion expressed in this case was that the trouble was largely functional, and while vision and color perception might never become normal, still both would improve. This opinion was based largely upon the condition of the visual fields for blue and red, as shown by the perimetric test. Charcot first pointed out that a contraction of the field for blue, until it reached the limits of the red field or passed within it, associated with a general contraction of the visual fields, was often purely functional, frequently noticed in hysteria, and often lasted for years. There has been singularly little written upon the reliability of this in diagnosis and prognosis. I believed my patient's visual condition was largely the result of concussion and nervous shock, and it was of much satisfaction to me that I was able to make another careful examination of the patient after a lapse of over four years. The vision of the right eye is $\frac{20}{30}$, of the left eye $\frac{20}{30}$, plus. The visual fields are shown in No. 3. It is noticed that the field for white is very much greater. The field for blue, while still inside that for red in the left eye, in the right eye extends beyond the border of the red in the nasal and upper portions of the field. The field for red is not very far from normal. The condition of the green field shows little improvement in the left, but much in the right, where the fixation is restored. There is little complaint made of the vision at this time, save that it is difficult for him to match shades of green when the light is at all poor. The green blindness at the fixation point of the right eye lasted, the patient tells me, about two years.

48 EAGLE STREET.

Editorials.

The Albany Guild for the Care of the Sick Poor.

In the January ANNALS notice was given of an extension of the work of this organization by an arrangement for supplying the service of trained nurses to people of moderate incomes. During the last month the Annual Report of the Guild has been issued, showing the successful inauguration of the new plan, and a year of activity and of constantly increasing usefulness. From February 1, 1897, to February 1, 1898, 435 cases were cared for, the care including any required service at the hands of nurses, and food, medicines, surgical dressings, etc., for the poor; 5,696 visits were made. The Guild is supported by voluntary contributions, and the treasurer's account shows a small balance in the bank on January 30, 1898.

The work of the Guild has doubled during the year, and with wider appreciation of the peculiarly valuable service it is enabled to render both to patient and physician, there must follow a constantly increasing demand for its ministrations. To meet this there should be promptly accorded liberal support by all charitably disposed people, that the officers of the Guild may be sustained.

From the physician's point of view, the wider application of trained nursing, by the development of the Training School and of the District Nurse, will provide one of the most effective means for the dissemination and utilization of the principles of modern scientific medicine.

The Microbic Origin of Rheumatism.

Within the last few months a number of cases of rheumatism have been observed, from which bacteria were obtained, either from the blood or the joint effusion. Thiroloix reports a case from which he isolated from the blood during the febrile paroxysm a bacillus occurring singly or in pairs, and having marked pathogenic properties. The organism produced local œdema in rabbits, and after inoculation into the circulation, heart changes in the form of myo- and endocarditis. Thiroloix states this to be the same organism which was discovered by Achalme in 1891, and rediscovered by him in 1897. Achalme claims to have isolated a similar organism from severe cases of cerebral rheumatism in 1891, and again in 1897. He found the organism in the heart's blood, and in some instances in the cerebro-spinal fluid. Another observer, Papillon, also claims to have isolated Achalme's bacillus, as do two Italian observers, who worked independently on this subject. Triboulet and Coyon claim to have isolated a specific diplococcus from five consecutive cases of acute articular rheumatism; this organism was twice associated with Achalme's bacillus.

The evidence in favor of a bacterial origin for this disease is, therefore, at present rather contradictory, and points to the fact that we are perhaps dealing with two or three separate diseases. In any event the observations of the above-mentioned authors are hardly yet extensive enough to draw satisfactory conclusions.

Scientific Review.

Lumbar Puncture. — Lumbar puncture has proved so successful in the hands of the majority of clinicians who have used it that there now exists little doubt regarding its utility in the diagnosis of obscure meningeal lesions, and considerable clinical investigation is being carried on, with an endeavor to more clearly establish and define the scope of its application, both in diagnosis and prognosis.

Councilman, in a recent paper (*Johns Hopkins Hospital Bulletin, Feb., 1898*), conclusively demonstrates the use of spinal puncture in epidemic cerebro-spinal meningitis. This observer practised lumbar puncture in fifty-five cases of this disease; in thirty-eight cases the specific micro-organism was capable of demonstration in the withdrawn fluid. Many of the failures to detect the specific diplococcus in the aspirated fluid could be attributed to the late stage of the disease at which the puncture was made.

Grunert, in the *Münchener Medicinische Wochenschrift, Dec. 14, 1897,* speaks of the value of lumbar puncture in the diagnosis of intracranial complications of middle ear disease, with more particular reference to the determination of the existence of a lepto-meningitis in connection with purulent otitis media, and reports the good results of its application in four cases.

Korner (*Centralb. für die Grenzgebiete der Med. und Chirurg., Dec., 1897*) likewise recommends puncture in cases of otitic brain abscess, if a complicating lepto-meningitis is suspected. Absence of polynuclear leucocytes would indicate the absence of inflammation of the lepto-meninges.

Finally a number of cases of hæmorrhage into the brain and spinal cord have been diagnosticated by recourse to this procedure.

Raczynski, in the *Wiener Klinische Rundschau, Feb. 26, 1898,* refers to the interest aroused by the diagnostic possibilities, and believes that its therapeutic value has been overlooked. He presented a paper upon its uses in hydrocephalus at the International Congress at Moscow. In the so-called primary, or idiopathic form of hydrocephalus (congenital or acquired), the results were negative, whether the patient came under observation during the process of enlargement of the cranium or when the process had been completed, and had become stationary. In either event the exudation recurred promptly after the operation. By far the best results were obtained in cases of hydrocephalus of inflammatory origin. In several of these patients the pain, convulsions and vomiting were quickly relieved. The tendency is to recurrence, but the results were sufficiently pronounced to justify the hope that the operation may be curative.

Raczynski directs attention to the comparative safety of lumbar puncture as compared with paracentesis of the cranium, the fluid obtained in the second and later spinal operations showing none of the increase in inflammatory products so frequently following the latter method.

Quincke's operation is simple, and is carried out with aseptic precautions. It is performed by the introduction of a small and delicate trocar between the third and fourth lumbar vertebræ, in the middle line, or one centimetre laterally, in a slightly obliquely upward direction. The distance into the dura in adults is seven and a half centimetres; in children, two centimetres. The fluid should not be allowed to escape too quickly, but drop by drop, and should be at once submitted to chemical, microscopical and bacteriological examination. From one and a half to two ounces are to be withdrawn.

Raczynski prefers the sitting to the prone position The nurse or mother holds the child upon her lap, with the knees flexed upon the abdomen, as in a fœtal position. The child's pelvis is firmly fixed between the nurse's knees. The prone position has the advantage of counteracting the tendency to cerebral anæmia which is apt to follow the puncture, but in eighty-seven operations upon twenty-six children no disagreeable results were noted. The advantage is that fewer assistants are needed, and the patient feels more assurance in the arms of the nurse or mother.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D

Another Midwifery Bill. — Last year the counties of Chautauqua and Erie attempted to lessen the midwifery evil by having laws enacted granting them the right of appointing a board of examiners, consisting of physicians, for the purpose of controlling by examination all persons desiring to practice midwifery in those counties. Already the complaint has come from Erie county that the law is ineffectual, and in its practical effect subject to many criticisms.

This year Montgomery county comes forward with another bill of like character to lessen the evil, which seems to have become very great in this county. The bill is Assembly bill printed number 348, introduced by Mr. Murphy, January 24th, and referred to the Committee on Public Health. The measure has met with pretty strong opposition, not on the ground that the practice of midwifery should not be controlled, but for the reason that many believe that there should be a general law applying to the entire State. Also that if a halt is not called now, there is nothing to prevent every county in the State from applying for laws of local control, which, if passed, would lead to an unnecessary amount of legislation, to rivalries between counties, and many other complications, and eventually all of them would have to be repealed and a general law substituted.

State Colony for Consumptives. — On January 31st, Mr. G. A. Davis presented a resolution in the Senate relative to the establishment of a State Colony for Consumptives, which stated that 13,000 persons die yearly of pulmonary tuberculosis in this State; that at least 35% might be saved could proper means be provided for treatment, and that the vast majority die because they are too poor to obtain the necessary treatment. It also called for an investigation and report by the Public Health Committee as to the advisability of establishing such a colony in the State Forest Preserve.

This committee, after the investigation, presented a report, in which it said that science had shown that the disease was infectious and preventable by proper precautions, and that a dry and pure air, such as that of the Adirondacks, was one of the great essentials to the cure; that it was a matter for serious consideration by the State from a standpoint of political economy, because of the enormous number of deaths which entailed yearly a great financial loss; that this class of cases is rejected by most of the hospitals supported by public funds, and that Massachusetts had established a State Hospital for Consumptives, and New York city had appropriated $60,000 for the proper care of some of these unfortunates. The committee recommended that a committee of five be appointed by the Legislature to make further investigation during the interval of the session, to report its findings to the next Legislature, and that $1,000 be appropriated for necessary expenses.

The report was referred to the Senate Committee on Finance.

BULLETIN OF MEDICAL LEGISLATION.

Introduced.	Printed number.	TITLE.	Presented by	Referred to Committee on	Date of action. Passed.	Signed by Governor.
Jan. 19, '98	A. 1023	An Act, "To amend Agricultural Law, relating to receptacles for butter."	Mr. Witter.	Agriculture.	March 3	
Feb. 2, '98	S. 324		Mr. Johnson.	Agriculture.	March 16	
Jan. 20, '98	A. 1511	An Act, "To amend Agricultural Law, relative to inspection of dairy products."	Mr. McLaughlin.	Agriculture.	March 17	
Jan. 13, '98	S. 687	An Act, "To provide for proper sanitation, ventilation and protection from fire of school houses and other public buildings."	Mr. Wray.	Judiciary.	March 8	
Jan. 20, '98	A. 278		Mr. Marshall.	Cities.		
Jan. 25, '98	S. 230	An Act, "To regulate pharmacists and druggists, and to prevent accidents and mistakes in the preparing and compounding of medical prescriptions in the city of New York."	Mr. Ford.	Cities.	March 9	
Jan. 21, '98	A. 311		Mr. McKeown.	Public Health.		
Jan. 21, '98	A. 1159	An Act, "To amend Public Health Law, in relation to the adulteration of food."	Mr. Finn.	Public Health.	March 3	
Feb. 11, '98	A. 795	An Act, "To establish a State Board of Embalmers, and to regulate the practice of embalmers."	Mr. Hutton, Jr.	General Laws.	March 2	
Feb. 17, '98	A. 934	An Act, "To provide for the proper labeling of poisonous articles."	Mr. Oliver.	Public Health.	March 4	
Feb. 18, '98	A. 965	An Act, "To amend previous laws relating to the election and compensation of coroners in Rensselaer county."	Mr. Russell.	Internal Affairs.	March 4	
Jan. 5, '98	S. 518	An Act, "To provide for the treatment of all persons diseased, incompetent or dangerous from the use of alcoholic stimulants, opiates, narcotics or drugs of any description."	Mr. Brush.	Public Health.	Feb. 28	
Jan. 5, '98	S. 599	An Act, "To provide for the establishment, by the city of New York, of a farm colony for the detention, reformation and instruction of men convicted of vagrancy or habitual drunkenness."	Mr. Pavey.	Affairs of Cities.	March 3	
Jan. 13, '98	S. 79	An Act, "To provide compensation for animals killed in New York under tuberculosis law."	Mr. Ford.	Cities.	Feb. 24	
Feb. 18, '98	A. 959		Mr. Lowenthall	Cities.	March 15	

Jan. 20, '98	S. 332	An Act, "To amend the State Charities Law, relating to the licensing and regulation of dispensaries by the State Board of Charities."	Mr. Sullivan.	Public Health.	March 7	
Jan. 28, '98	A. 466		Mr. Davis.	Public Health.		
Jan. 24, '98	S. 217	An Act, "To provide by an appropriation of $77,252, for the erection and completion of a portion of Dannemora State Hospital for Insane Convicts."	Mr. Chaloon.	Finance.	March 7	
Feb. 1, '98	S. 310	An Act, "To amend previous laws relating to the incorporation of Bellevue Hospital Medical College."	Mr. Cantor.	Judiciary.	Feb. 28	
Feb. 4, '98	A. 605		Mr. Donnelly.	Charit. and Religious Institutions.	March 3	
Feb. 3, '98	S. 524	An Act, "To amend the Civil Code relating to the appointment of a foreign committee of the person and property of a lunatic, idiot, or habitual drunkard."	Mr. Raines.	Codes.	March 2	
Feb. 11, '98	S. 616	An Act, "To amend Code of Civil Procedure, relating to coroners and abolishing coroner's juries."	Mr. Brackett.	Codes.	March 3	
Feb. 11, '98	S. 519	An Act, "To amend the county law in relation to the number of coroners in the counties of the State."	Mr. Brackett.	Codes.	Feb. 28	
Jan. 24, '98	A. 347	An Act, "Appropriating $158,000 for the Craig Colony for Epileptics."	Mr. Kelsey.	Ways & Means.	Feb. 15	
Feb. 2, '98	S. 326		Mr. Humphrey	Finance.	March 17	
Jan. 13, 98	A. 74	An Act, "To prevent the sale and manufacture of cigarettes."	Mr. Hoffman.	Public Health.		
Feb. 22, '98	S. 576		Mr. Wilcox.	Public Health.		
Feb. 10, '98	A. 1074	An Act, "To amend certain chapters of the act, entitled 'An Act to Incorporate the Pedic Society of the State of New York.'"	Mr. Bondy.	General Laws.	March 3	
Mch. 9, '98	Senate		Mr. Bondy.	Public Health.	March 21	
Feb. 22, '98	S. 587	An Act, "To amend previous laws relative to appointment of Board of Lunacy Examiners for the City of New York."	Mr. Coffy.	Cities.		
Mch. 4, '98	A. 1343		Mr. Gallagher.	Affairs of Cities.		
Feb. 25, '98	S. 652	An Act, "To amend the Public Health Law relative to the unlawful practice of medicine."	Mr. Coggeshall	Public Health.		
Mch. 2, '98	S. 711	An Act, "To amend the Penal Code relating to the sale of poisonous substances by druggists and pharmacists upon physician's prescription."	Mr. Ford.	Codes.		

BULLETIN OF MEDICAL LEGISLATION — CONTINUED.

Introduced.	Printed number.	TITLE.	Presented by	Referred to Committee on	Date of action.	Signed by Governor.
Mch. 4, '98	S. 790	An Act, "To regulate the occupation of barbers and to provide for the sanitary inspection of barber shops."	Mr. Lamy.	Judiciary.		
Jan. 26, '98	A. 1043		E. C. Brennan.	General Laws.		
Mch. 4, '98	S. 792	An Act, "To provide for the improvement of Public Health in the City of New York."	Mr. Winan.	Cities.		
March 9, '98	S. 857	An Act, "Amending previous laws relating to salaries of coroner's physicians in Greater New York."	Mr. Grady.	Cities.		
March 10, '98	S. 905	An Act, "Fixing term of office of coroner of Kings county."	Mr. G. A. Davis.	Int. Affairs.		
March 14, '98	S. 944	An Act, "To amend the Insanity Law, relative to transfers from State hospitals to Matteawan State hospital."	Mr. Malby.	Judiciary.		
Feb. 21, '98	A. 1601	An Act, "To Amend the Public Health Law, relative to the disposition of cadavers."	Mr. D. W. Van Hoesen.	Public Health.		
Feb. 21, '98	A. 995	An Act, "To amend the Public Health Law, relative to the practice of medicine without a license."	Mr. Ellis.	Public Health.		
Feb. 23, '98	A. 1060	An Act, "To protect the public health by forbidding the sale of goods in second-hand packages."	Mr. Haight.	Public Health.		
Feb. 25, '98	A. 1137	An Act, "To amend the Public Health Law in relation to admission to examination to practice medicine."	Mr. E. C. Brennan.	Public Health.		
Feb. 28, '98	A. 1184	An Act "To amend the Public Health Law and acts amendatory thereto, in relation to pharmacy."	Mr. Hill.	Public Health.		
March 2, '98	A. 1272	An Act, "To amend the Greater New York charter relative to pharmacists and druggists."	Mr. Finn.	Public Health.		
March 3, '98	A. 1316	An Act, "To amend previous laws in relation to milk cans."	Mr. Dillon.	Agriculture.		
March 3, '98	A. 1318	An Act, "To amend the Greater New York charter, relating to sanitary code, Board of Health, its powers and duties."	Mr. Gallagher.	Cities.		

March 3, '98	A. 1319	An Act, "To provide for a commission to investigate the nature and value of vaccination, antitoxin seropathy, and other alleged prophylactics, and to appropriate moneys for its expenses."	Mr. Gallagher.	Ways and Means.		
March 3, '98	A. 1326	An Act, "To amend the Public Health Law in relation to appraisal of horses afflicted with glanders and to compensate owners thereof for horses killed pursuant to law."	Mr. Kelsey.	Public Health.		
March 3, '98	A. 1333	An Act, "To prevent the occurrence of premature burial."	Mr. Redington.	General Laws.		
March 4, '98	A. 1357	An Act, "To provide for the proper labeling of poisonous articles."	Mr. Oliver.	Public Health.		
March 11, '98	A. 1538	An Act, "To amend State Charities Law in relation to discharge of patients at the Craig Colony."	Mr. Kelsey.	General Laws.		
March 9, '98	A. 1474	An Act, "In relation to the sale of patent or proprietary medicines."	Mr. Wicke.	Public Health.		
March 16, '98	A. 1664	An Act, "To amend previous laws in relation to illegal practice of medicine and dermatology."	Mr. Hoffman.	General Laws.		
March 21, '98	S.	An Act, "To provide a pension for medical officers in service of the State hospitals for the insane, for disabilities incurred while in active service."	Mr. Page.	Finance.		

S. Senate A. Assembly.

Obituary.

LEWIS WARRINGTON PENDLETON, M. D.

Dr. Pendleton was born in Camden, Me., March 18, 1844. He was named Lewis Warrington after Commodore Lewis Warrington, for whom his father, George Pendleton, acted as private secretary when a young man on board the old frigate Constellation. Mr. George Pendleton was for many years a prosperous merchant in Camden, Me. He was a man of courtly manners, affable, public-spirited and the soul of honor. His wife was a woman of remarkable beauty and grace, and rare social gifts. She is still living in advanced old age, and retains to an unusual degree the sweet voice, charming manner and beauty of early womanhood. His parents were reared amid prosperous conditions, and during their long life in Camden, and later in Gorham, Me., they lived generously, entertaining with a hospitality that was as gracious as it was hearty. Eight children were born to them — four sons and four daughters — all of whom lived to middle life. Lewis was the fifth child. The daughters, famed for their beauty, grace and social gifts, made the Pendleton house a notable home even in a community of bright social people. Perhaps no family in Maine in the fifties and sixties more truly deserved the good old English name of gentle folk. No wonder that throughout the life of Dr. Pendleton the charm of his simple, gracious manner drew all men to him.

In 1854 Mr. Pendleton removed to Gorham, Me. He was attracted by the excellent academies long established in that village. In one of these, the Gorham Boys' Academy, Lewis received his academic training. The boy was father of the man. He never bullied nor shammed. Kindly, full of fun, a rare story-teller, honest and clean, intelligent and clear-headed, he was a knightly boy — the pride of the school and the village.

In 1861, when but seventeen, Lewis reluctantly surrendered his plan of a collegiate education and entered upon the study of medicine with Dr. N. F. Monroe, of Belfast, Me. In 1862 Dr. Munroe was appointed surgeon of the Twentieth Maine Regiment, Adelbert Ames, colonel (afterward Governor of Mississippi). Lewis accompanied him as hospital steward. At

Antietam and Fredericksburg the young assistant won the praise of officers and the admiration of the men for his persistent services under fire. A long and dangerous illness followed the latter engagement, and he was discharged for disability, April 2, 1863.

In the winter of 1863 Dr. Pendleton took his first course of lectures at Bowdoin College; his second, in 1864, at the Albany Medical College. He was attracted to Albany by the reputation of the professors and the larger opportunities afforded. He graduated in 1865, receiving one of the two honors voted by the class — the youngest member in a class numbering fifty. Dr. Quackenbush, then registrar, says in the minutes of the college: " Dr. Lewis W. Pendleton pronounced an excellent essay." Throughout his life Dr. Pendleton retained a warm interest in his *alma mater*, although the distance of his residence from Albany prevented intimate association with the faculty or alumni.

Dr. Pendleton commenced practice in Belfast immediately upon graduation, when but twenty years of age. He married, October 9, 1867, Miss Carrie S. Connor, of Belfast, who survives him. His life during the fifteen years of his practice in Belfast was one of extraordinary activity. His geniality and kindliness, shrewd sense, promptness and skill won patients rapidly. He became ambidextrous to facilitate surgical operations. Before he was thirty he had become one of the most influential and successful physicians on the lower Penobscot. Dr. Pendleton early became warmly interested in scientific researches, particularly in geology and prehistoric matters. His collection of geological specimens, fossils and Indian relics was one of the best in the State. He prepared papers on scientific subjects and lectured frequently in local courses. He was an active and influential Mason.

During the latter part of his practice in Belfast he was drawn into business. His father-in-law left a large estate invested in wooden ships. This form of property was at that time of uncertain value; but many shrewd business men believed in wooden ships in spite of the depression. Dr. Pendleton took this view and assumed the liabilities of the estate. But heavy losses by shipwreck and depreciation in the value of ships forced him into insolvency, and in 1879, after fifteen years of exhausting labor and successful practice, he found himself penniless, and with a debt of more than $20,000, for which he was legally liable. He refused to take advantage of the bankrupt law, and after securing his family by a modest life insurance, he devoted his energies to paying this debt of honor. He paid more than half of it during his life, and by his will he made a trust of his estate, and at his wife's decease the estate is to be applied to liquidating the balance of the debt. But the worry of these years, when a day of business and a day of practice was crowded into each twenty-four hours, aged him fast, and although he was but thirty-five when he removed to Portland, in late 1879, he was physically in late middle life.

Dr. Pendleton repeated in Portland and on a larger scale the successes of his early professional life in Camden. He gained at once a large and lucrative practice. He was immediately elected a visiting physician of the Maine General Hospital, and in 1882 was transferred to the surgical staff. He held this position until forced to resign by ill health, in 1895. He taught physiology for many years in the Portland School for Medical Instruction, and was for sixteen years surgeon for the Maine Central Railroad, where his tact and professional skill made his services very valuable. In 1876 he gave the annual address before the Maine Medical Association; the subject was "Unconscious Action." It attracted considerable attention. He was elected President of the association in 1895. He also gave the anniversary address at the Albany Medical School in 1890. It is still pleasantly remembered for its rare good sense, spiced with quaint humor. A brother physician writes:

"Dr. Pendleton's contributions to medical literature were always characteristic of the man — strong, brilliant, well matured, and full of that deep, farseeing and well-rounded judgment that made his opinion upon surgical matters so very valuable."

Twelve years ago Dr. Pendleton became solicitous about his health. His disease was obscure — some form of nervous disorder. A famous specialist pronounced it locomotor ataxia. He spent a winter abroad, another in Jamaica, and took long winter vacations in the South. He received benefit from the milder climate of the South. This led him, in 1895, to accept a very generous offer from Mr. Flagler to become house physician at the Royal Poinciana, Palm Beach, Fla. In the early autumn of 1897 came the heaviest stroke of his life. His son Lewis, his sole surviving child, a boy of brilliant promise, died suddenly just as he was entering college. The blow was crushing, but he rallied bravely, and in devotion to his patients found a partial relief from his suffering. A friend writes: " His courage never failed him. He kept at his work, and often performed difficult operations when suffering intense pain; and what was more difficult, preserved his cheerful disposition, and was often giving cheer to those that needed it less than he."

When Dr. Pendleton left for Palm Beach at Christmas, in 1897, he seemed in better health than for some time, but he was worn out, and the end came suddenly. He died at the Royal Poinciana, January 13, 1898.

The estimate in which he was held by his associates is shown by the following tribute paid his memory by his brother physicians of Portland:

" For the second time in the short space of a few months the community has been shocked by the sudden death of a member of the medical profession. Dr Lewis W. Pendleton came to Portland seventeen years ago and, since then, has been one of the prominent physicians of the city and community. He was a well-known practitioner of the eastern part of the State previous to this, so that he at once took a leading position among the older men of this city. We ever found him a cheerful and genial companion, which trait in his character early won for him many warm friends in the profession and community at large. He rapidly acquired an extensive practice and endeared himself to his patients, many of whom will sadly miss his kind and tender ministrations. Though for several years an invalid himself, and fully aware of the serious nature of his malady, yet he bore it with such heroic fortitude that few, except his most intimate friends, were aware of it. While we regret his loss we shall ever remember his gentle and pleasant companionship and admirable social qualities. We extend to his family our deepest sympathy in this their hour of trouble, trusting that the devotion as husband, father, son and brother may be cherished as a sweet remembrance of him who has passed away before them.

S. H. WEEKS,
S. C. GORDON,
H. P. MERRILL,
Committee."

This is the generous tribute of those who knew him, drawn by the ablest physicians of his own city. Through it runs the thought that was felt by every friend — the man is greater than the physician, although he is the peer of the best in his profession. Genial, kindly, self-effacing, yet commanding deference by his manliness and professional skill, winning all by the charm of his manner, what wonder that men and women leaned upon the wise physician and loved the unselfish friend! H. P. W.

GEORGE H. NEWCOMB, M. D.

George Hopkins Newcomb was born on December 3, 1825, at Pittstown, N. Y., and died on February 22, 1898, at Albany, N. Y. In 1840 he accompanied his father, the late Thomas Wallace Newcomb, who removed from Pittstown to Troy, and engaged in the drug business. In 1842 the family moved to Lansingburg, and in 1848 to Albany. In 1851 George H. Newcomb was for a short time a member of the firm of Flack & Newcomb, grocers, at Albany, but abandoned a mercantile life to study medicine. He was graduated from the Albany Medical College in 1855, and practiced until 1862 with his medical preceptor, the late Dr. Charles Devol. On August 15, 1862, he entered the military service of his country as assistant surgeon of the One Hundred and Thirteenth New York Infantry Volunteers (afterwards Seventh New York Heavy Artillery). He soon had the full rank of surgeon, and served in that capacity until July 3, 1865, when he returned to Albany, and again began the practice of his profession, in which he continued active until within a few months of his decease. He was never married.

Dr. Newcomb was fifteen months at Fort Reno, and saw active service at the Battle of the Wilderness, at Spottsylvania and Petersburgh. He had many narrow escapes, and had a record of unflagging devotion to his men.

In his private life his character was above reproach, and his memory will long be preserved in many grateful hearts because of frequent deeds of unostentatious charity. He sometimes quietly remarked to those intimate with him: "Somebody must take care of the poor. If they can hardly keep body and soul together, why should a doctor's bill be sent?" In his professional life he was indefatigable in acquiring fresh knowledge, and continued to the last well read in the literature of his profession. He was quiet and simple in his tastes, and an earnest, loyal, devoted friend. Many who knew him well will recall his enthusiasm over antiquarian relics and his fine collection of coin. He was one of God's noblemen, who made his life rich in deeds of mercy, kindness and helpfulness. W. O. S.

Conant Sawyer, M. D.

Dr. Conant Sawyer, for the past ten years physician and surgeon of the State prison at Auburn, died at his home in that city on Sunday, February 20, after a week's illness, of pneumonia. He was a graduate of the Albany Medical College, class of '64, and was one of its most loyal sons.

Dr. Sawyer was born at Westport, N. Y., March 29, 1841, and was a son of Rev. Miles M. F. Sawyer, one of the pioneer Baptist preachers of that section. His boyhood was spent in his native town, and here he commenced the study of medicine, which was interrupted for a time by the Civil War.

Though being incapacitated for the active duty of a soldier on account of defective vision, he served his country as attendant to Capt. Robert W. Livingston, who was in command of Company F of 118th New York Infantry Volunteers. In this position he served his country with the same devotion that has characterized his professional life. During the year of his graduation he was married to Miss Jennette R. Wright, who died in 1894. Of this union three children were born, two sons and one daughter, who survive him. One son, Dr. Thomas Conant Sawyer, of Elbridge, N. Y., is also a graduate of the Albany Medical College, class of '94. After graduation the deceased practiced his profession for 21 years at Ausable Forks, giving up an extensive and lucrative practice in 1888 to accept the position of physician and surgeon at Auburn prison.

His success in private practice followed him through his official career as prison physician. Upon assuming charge he had the prison hospital completely renovated, and made as attractive and comfortable as was consistent with the existing penal laws. The mortality of the prisoners was also greatly reduced during his management, and the Auburn prison hospital was long considered the best in the State.

Dr. Sawyer was an expert in physical diagnosis, and had remarkable success in the treatment of diseases of the heart and lungs.

The first official electrocution took place at Auburn prison during his official career, and he administered to the physical infirmities of the ill-fated Kemmler, the first victim of the electric chair. For ten years he was president of the County Medical Society at Ausable; was also a member of the New York State Medical Society, a charter member of the New York State Medical Association, and a member of the American Medical Federation. In politics Dr. Sawyer was an unflinching Democrat, and held the position of State Committeeman, and was one of the electors on the Tilden ticket for President. A few years ago Dr. Sawyer married Mrs. John G. Fowler, of Auburn, an estimable lady, who, with his three children, survives him

He was particularly interested in the young man in medicine, and notwithstanding his busy and active life, he always found time to spare with his students, giving them the benefit of his years of experience. In the prison hospital he generally had two or three students with him, and nothing afforded him more pleasure than a " quiz " with his students or a lively discussion over some technical point. He had been a careful reader, and was up to date with the modern text-books.

He was a man of marked force of character, of a generous, kindly nature, a born wit, and was ever ready with a witticism to emphasize a point. He lived in the sunshine of life, and " made sunshine in shady places." THOMAS J. ARUNDEL.

YOUNGSTOWN, OHIO.

WILLIAM H. ROBB, M. D.

Dr. Wm. H. Robb was born in the town of Florida, Montgomery county, N. Y., July 1st, 1843. Of ten children he was the youngest. His early life was spent upon his father's farm while not attending the district school. He subsequently studied at the academy at Fergusonville, Delaware county, N. Y.; at the seminary, Middletown, Saratoga county, and the Saratoga High

School. He finished his studies in the Amsterdam Academy in 1862.

Before this period he had determined upon a medical career, but he taught school for a term in and about Amsterdam. When twenty years old, on the 4th of April, 1863, he began the study of medicine with Dr. Jacob G. Snell, of Amsterdam. He graduated from the Albany Medical College in December, 1865, and on the first of the following year began the practice of medicine in partnership with his preceptor, Dr. Snell. This was continued until 1873, after which Dr. Robb practiced alone. In 1880, in order to pursue post-graduate courses in New York, another partnership was formed with Dr. Charles Stover, and continued for three years. His studies inclined him to gynecological work, and from this time to the close of his career that special branch, with general surgery and consultation practice, made him the most conspicuous physician in the Mohawk Valley. Dr. Robb was a member of the Montgomery County Medical Society since 1866. He was a permanent member of the Medical Society of the State of New York and of the American Medical Association. He was a founder of the New York State Medical Association. He was a charter member of the Amsterdam City Medical Society.

Dr. Robb's intense activity led him to be interested in public affairs to an unusual degree. For politics, so called, he had an aversion. To his persistent efforts, after repeated failures and much opposition, Amsterdam is indebted for its magnificent public water works. He interested himself in the Waring system of sewers, that soon followed upon the introduction of the water supply. The establishment of a city hospital enlisted his support from the beginning. He served as president of the Montgomery County Agricultural Society. For many years he was a trustee of his school district. But it was in the founding of the City Library that his energy and enthusiasm were most conspicuously displayed. He was its single president, and came to regard it with the tender solicitude of a parent toward his child. The "Robb Memorial Library Fund," now swelling into the thousands from the contributions of his friends, will be a fitting memorial to his public zeal.

The conspicuous characteristics of Dr. Robb were enthusiasm in whatever interested him, a robust frame that seemed never to tire, positive convictions that, while they were not thrust upon others, were nevertheless to be clearly understood when announced. In practice he was conservative, always resourceful, never quite ready to cease active interference with disease, sympathetic in his nature, inspiring his patients with hope and courage to the utmost.

While attending the October meeting of the State Medical Association, Dr. Robb was taken ill, and rapidly developed a suppurative peritonitis. He was operated upon at once, and after a critical and tedious period returned to Amsterdam in the December holidays. Recovery being slow, accompanied by his wife he went to Selma, Ala., to avoid the winter's rigor. While there a pneumonia was developed that proved fatal January 12th, 1898.

Dr. Robb was married on November 14th, 1872, to Miss Margaret J. Moody, who, with two sons and two daughters, survives him.

CHARLES STOVER.

JOSEPH LEWI, M. D.

Dr. Joseph Lewi, who died at his home in Albany on December 19, was identified with the medical profession of that city for 49 years, and was known among his fellow-practitioners as a model physician, as he was recognized by the community as an ideal citizen. He was born in Radnitz, a small city in Bohemia, on August 17, 1820, where he received his rudimentary education. The facilities for acquiring knowledge there were limited, and he was still a young lad when he left the parental roof and went to Pilsen, where he attended the gymnasium or high school, from which he was graduated with honors. He was one of a large family, and his parents were unable to provide the means for further education, and when the young man went to Prague to enter upon a course of higher education he was dependent on himself and defrayed his college expenses by giving lessons and coaching other boys of his age. He was not only a diligent student in the line of his chosen calling, but attained a high standard in literature and the sciences. From Prague he went to the University of Vienna, having prior to that gained a hospital position by competitive examination. During his residence in the hospital he devoted himself to the diseases of women and children, which ever afterward remained his favorite field of practice, and in which he soon gained an enviable reputation for correct diagnosis and practice. At Vienna he attended the lectures of and received instructions from the greatest medical authority of that time, among whom were Rokitanski, Hebra, Schuh, Hyrtl, Oppolzer, Skoda and Rosas.

Toward the end of his student years a literary circle was formed in the University of Vienna, which had among its members some of the brightest men of their time, and their writings, in prose and verse, their debates and their contributions to the press, were the forerunners of the great movement which culminated in the revolution of 1848.

Dr. Lewi was a member of this coterie and was associated intimately with Leopold Kompert, the poet; Moritz Hartmann, the novelist; Solomon Mosenthal, the dramatist and journalist, all poor young men at that time, like himself, all struggling along the path which led to a university degree. After his graduation he returned to his native city and began the practice of his profession, but one year there demonstrated to the young physician that he had outgrown the narrow limits, and he determined to go to America, whose free institutions he had learned to love, particularly as they were in such glaring contrast with the despotism under which he had been reared. When his intentions became known to his Vienna friends, they implored him to remain and take part in the revolution which was inevitable, and to share in the glory which would be the lot of those who took part in it. His answer was characteristic of the man, and showed that even then he had a keen knowledge of political affairs, and did not allow enthusiasm to destroy judgment. "Your cause is just," he wrote to Hartmann, "and my sympathy is with you, but the cause is hopeless, and can result only in disappointment."

Dr. Lewi had already begun the practice of his profession in Albany when his friends wrote to him from Europe, saying that his prophesies had been fulfilled, and the day of redemption was still distant. He soon acquired a large practice in his new home.

His kindly manner made him beloved wherever he went, his knowledge in matters pertaining to his profession and his modesty secured for him the respect of his fellow-practitioners, and his conscientiousness and self-sacrifice in the discharge of his duties gave him not only the confidence but the friendship of his patients. He became a member of the Albany County Medical Society in 1852, and was for many years a regular attendant at its meetings, where he read many interesting and instructive papers, and took part in many of its scientific debates. He served as vice-president and president of the society, and was for many years the senior censor of the State Medical Society.

Dr. Lewi was also a member of the staff of the Albany Hospital, and as consulting physician devoted much time to that institution. He was a hard-working physician, and allowed nothing to interfere with his daily routine, and served in the cause for which he had enlisted regardless of the hour or the state of the weather. Through all the years of his labors he kept abreast of the times in scientific and literary reading, and preserved with a youthful appearance and vigorous health a cheerful and sunny disposition, which brought comfort to the bedside and cheer to the despondent.

When it was organized, Dr. Lewi joined the Republican party, having been in sympathy with the anti-slavery movement before he came to America.

He was uncompromising in his condemnation of men in the North who were not in sympathy with the Union cause during the Civil War, and, together with forty-one other citizens of Albany, organized the Union League, in the days when the copperhead element threatened to aid the armed enemy. Together with Drs. Thomas Hun, Mason F. Cogswell, Alden March and Lansing, he served by appointment of Governor Morgan on a commission to examine surgeons for the volunteer army.

He never aspired to public office, but was persuaded to become a member of the Board of Public Instruction of the city of Albany. He discharged the duties of that office with characteristic conscientiousness, and became so engrossed in the work that he allowed himself to be elected again and again, and remained in the board twelve years.

Dr. Lewi's illness began last spring, but until two months before his death he attended to his office practice, and retained to the last his interest in matters pertaining to his profession and the affairs of the world. Up to a few weeks before his death he was a veritable encyclopædia on matters pertaining to music and literature. He passed away peacefully, surrounded by his family, and was mourned by thousands.

Physicians in memorial meeting assembled spoke his praises; societies of which he had been a member framed feeling tributes to his memory; journalists wrote of his virtue, his loyalty and his well-directed labors; his pastor eulogized him in glowing terms; but to those who knew him best the words of the woman whose wretched garb betrayed her poverty, and who was one of the throng that came to look for the last time upon that which had been Dr. Joseph Lewi, were the most eloquent. She paused beside the bier and, weeping, said: "He was a good man."

R. I.

Medical News.

THE NEXT MEETING OF THE AMERICAN MEDICAL ASSOCIATION, DENVER, JUNE 7–10, 1898. — The ANNALS is indebted to Dr. C. R. Axtell, editor of the *Colorado Medical Journal*, for a reprint of the announcement of this meeting, from which the following abstracts are made:

Subscriptions to the amount of $6,000 have been secured from the medical profession of the city. The Western Traffic Association has been asked to furnish the members of the Association with half rates, and a time limit, on all railroad tickets, of thirty days from the date of arrival. While no definite response has been secured to this request, it is generally understood that the railroads view it with favor, and there is reasonable anticipation that such rates will be secured. Some of the roads have already announced special trains, and there will probably be a special run out from Louisville, another over the Missouri Pacific from St. Louis, a general train from Chicago; a special is talked of from St. Paul, and even from New York City.

The Committee on Hotels has done very effective work, and has gotten out an attractive little leaflet giving the hotels and principal boarding-houses of the city, with their agreed rates for the meeting and the means of reaching them by car.

The Committee on Souvenir Book hope to present an exceedingly attractive souvenir volume, giving ample illustrations, and also a statement of the various resources, climatic, mineral, horticultural, grazing, agricultural, oil, etc. It is their intention to make this attractive by drawing upon the numerous illustrative cuts in possession of the publishers and the railroads, and also to have it replete with information, furnishing a map of the State and city, on which will be shown diagramatically the places of meeting, hotels, etc.

The Committee on Badges are in communication with the leading houses in the country, and are making an effort to get out something unusually attractive and simple, preferably a button.

Local railroads are very much interested, and will furnish an excursion " Over the Loop," and also one to Colorado Springs and Manitou, with special rates throughout the entire State. An effort is being made, and with good prospects of success, to have the profession and commissioners of Clear Creek county provide the luncheon for the Loop excursion. Colorado Springs is raising money, and guarantees to take care of the members of the Association after they have landed there. Several prominent citizens have volunteered to open their houses for an evening reception for one of the evenings of the meeting.

The Ladies' Committee are busily at work making arrangements for the proper entertainment of the visiting ladies.

The Committee on State Medical Societies have corresponded with the president and secretary of every State organization in the country, and favorable replies have been received, many of them stating that they would come in delegations of one hundred. Delaware and Vermont had signified their intention of sending delegations.

The American Academy of Medicine is to hold its meetings on the Saturday and Monday preceding the general Association, and indications are favorable for a large meeting. The Association of State Boards of Medical Examiners holds its meeting in Denver on Monday preceding the general meeting, as well as the Association of American Medical Colleges. The proper committee is arranging to provide a swell banquet for the medical editors, which is planned to be given on the night preceding the general meeting. The reports received indicate that many of the leading men in medical journalism in this country will be in attendance upon the meeting, and that this banquet will be a marked feature and a success. Should the responses from the Western Traffic Association be as favorable as it is anticipated, the expectation is then to carry the matter before the Eastern Traffic Association, and in that way secure half rates from all over the country.

The reports of the men who are interesting themselves in the section work have been encouraging. The member from the Dermatological Section reported that one obstacle in the way of the dermatologists of prominence coming to the meeting was that the meeting of the American Dermatological Association was to be held at the same time in New York, and that the president of that Association had been communicated with, and an effort was being made to see if the meeting could not take place in Denver instead of in New York, or at least if an arrangement could not be made so that the two meetings would not conflict. He had a number of favorable replies from the leading dermatologists of the country, and was awaiting more definite action at the hands of the Dermatological Association. It was reported that the Association of American Surgeons is to hold its meeting in New Orleans previous to this meeting in Denver, and that a number of the surgeons had signified their intention of making an effort to bring a large delegation of these men on to Denver. It is also expected that a number of the military surgeons, which body is to hold its annual meeting in Kansas City, will come to Denver to attend the general meeting. In neurology it was reported that a symposium would be held on "Brain Tumors," and that such men as Hughes, of St. Louis; Mills and Dercum, of Philadelphia; Edes, Putnam and Bullard, of Boston, and a number of the Chicago men would take part in the symposium. Another discussion has also been arranged between the Neurological and Gynæcological Sections, in which "Neurasthenic Conditions of Women, due to Gynæcological Causes," will be the theme. The Committee on Materia Medica and Therapeutics called attention to the statement in the *Journal* of January 29, made by Dr. Shoemaker, as chairman, outlining the work promised for that section, which includes, on "Yellow Fever," Surgeon-General George M. Sternberg, Prof. Guiteras, Philadelphia; Mitchell, of Jacksonville, Fla.; T. S. Scales, of Mobile, Ala.; Thornton, of Memphis, and Bracken, of Minneapolis, and papers by Klebs; Potter, of San Francisco; Prentiss, of Washington; Frankhauser, of New York; Woodbury, of Philadelphia; Upshur, of Richmond, Va.; Rohé, of Baltimore; Brown, of Sac City, to say nothing of a paper by T. Lauder Brunton, of London, and a long list of names, Atkinson, of Baltimore; Beates, Philadelphia; Balliet, Philadelphia; Butler, N. S. Davis, Jr., of Chicago; Moses, of Kansas City; Solomon, of Louisville; Sayre, of Lawrence, Kan.; Sweringen and Stephens, Indiana, the titles of whose papers are not yet announced. In the Section on Practice of Medicine, of which the chairman happens to be a local man, it was reported that Prof. J. C. Wilson would conduct a symposium on "Perforative Peritonitis," in which, besides himself, Drs. Senn, Keen, Deaver, Polk, Musser, Lawrence Mason and Stockton will take part. Another symposium, on "Thrombo-Phlebitis," was being arranged by Prof. W. Gilman Thompson, of New York, but the names of the men who are to engage in the discussion have not yet been furnished. On the general subject of "Tuberculosis," papers have been promised by Profs. Vaughan, Whittaker, Klebs, Norman Bridge, Rochester; Hirschfelder, of San Francisco; Fisch, of St. Louis, and that some interesting papers, containing results of two sets of experiments conducted here in Colorado, will be given. Dr. Elmer Lee, of New York, will furnish a paper on "The Medical Treatment of Appendicitis." Dr. Edwards, of Chicago, will give a paper on "Nephritis Without Albuminuria;" Dr. Turck, on the results of his recent investigations on the stomach; Dr. Archinard, of the State Bacteriological Laboratory of New Orleans, will give a paper on "Yellow Fever." Dr. I. N. Danforth, of Chicago, will present a paper on "What Caused the Great Mortality Amongst the Plymouth Pilgrims in 1620 and 1621?" And others, such as Drs. Welch, of Baltimore; Judson Daland, of Philadelphia; Billings, of Chicago; Rachford, of Cincinnati; Bond, of Indiana; Woods Hutchinson, of Buffalo; Atkinson, of Baltimore; Hinsdale, of Philadelphia; Williams, of Buffalo; Thatcher, of New York; Allen Jones, of Buffalo; Hance, of Lakewood, and Graham, of Toronto, have signified their intention of being present, but have not yet furnished the subjects of their papers; while still others, such as Drs. Beverly Robinson, of New York; Hare, of Philadelphia; Tyson, of Philadelphia; George B. Shattuck, of Boston; Fitz, of Boston; Theobald Smith, of Boston, will try to be present and give papers, but are undecided as yet.

ALBANY COUNTY MEDICAL SOCIETY. — A special meeting was held Thursday afternoon, February 24, 1898, the president, Dr. J. V. Hennessy, in the chair, to take action on the death of the late Dr. G. H. Newcomb. Upon motion of Dr. Stillman, a committee of four, consisting of Drs. Stillman, Thompson, MacNaughton and Van Allen was appointed to prepare memorial resolutions. After report of this committee and adoption of the resolutions the meeting adjourned.

A regular meeting was held Wednesday evening, March 16, 1898, the President, Dr. J. V. Hennessy, in the chair.

Dr. L. B. Winne presented a paper on "Eczema," which was discussed by Drs. Hun, Ward and Neuman.

Dr. W. F. Robinson read a paper on "Some Aspects of Medical Expert Testimony." Dr. Robinson's paper was discussed by Dr. Ward.

ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE. — The Twenty-fifth Annual Meeting will occur on Wednesday, April 20, 1898.

The program for the day will be as follows:

10:00 A. M. — *Reception in Library.*

10:30 A. M. — *Annual Meeting in Alumni Hall.*

The faculty address of welcome will be delivered by Prof. Willis G. Tucker, M. D. The historians for '48, '58, '68, '78 and '88 are expected to present class histories, and the necessary business, including the President's address and election of officers, will be transacted.

12:30 P. M. — *Reception by the Faculty of the College in the College Library.* — A collation will be served.

3:00 P. M. — *Commencement Exercises at Harmanus Bleecker Hall.*

Seats will be reserved for members of the Association.

It will be noticed that this program enables out-of-town members to leave for their homes on earlier trains than has hitherto been possible

A full attendance is desired.

HAMBLIN B. MABEN ('57), M. D.,
President.

Jno. Ben. Stonehouse ('71), M. D.,
Corresponding Secretary,
5 High st., Albany, N. Y.

Albany College of Pharmacy. — The Seventeenth Commencement was held upon the evening of March 15th, when a class of thirty graduated. The following was the order of exercises:

Overture — "Zephyr and Rose,"	*Lindpaintner.*
Prayer	Rev. Frederick N. Rutan.
Address of Welcome	Willis G. Tucker, M. D., President of the Faculty.
Fantasie — "My Old Kentucky Home,"	*Langley.*
Conferring Degrees,	Andrew V. V. Raymond, D. D., LL. D., President of the University,
Air de Ballet — "Love's Whisper,"	*Marks.*
Address to the Graduates	Charles E. Merriam.
Cornet Solo — "On the Banks of the Wabash far away," W. T. Wendell.	*Dresser.*
Valedictory	Frank J. Palmer.
March — "The Bride Elect,"	*Sousa.*
Presentation of Prizes	Alfred B. Huested, M. D.
Waltz — "Au Revoir,"	*Waldteufel.*

Music.

— Dr. William E. Milbank (A. M. C., 1872), of Albany, has been nominated by Governor Black as a manager of the State Reformatory for Women at Hudson, N. Y.

Current Medical Literature.

The Presence in the Urine in Puerperal Eclampsia of an Albumen having a Special Reaction. — Bar, Menu and Mercier (*Comptes Rendus de la Societe de Biol.*) describe the presence of a peculiar reaction in the urine of women during puerperal eclampsia. In three cases in which they tested the urine during the attack of eclampsia, and during the convalescent period, they found the following changes: During the attack almost all the albumen precipitated by heat was redissolved by the addition of a few drops of acetic acid. After the attack and during the convalescence this form of albumen gradually disappeared, and was either replaced by ordinary serum-albumen, or else entirely disappeared. That the material acting in this way was really albumen was shown by other tests. As much as 50.45 grammes to the litre was present during the height of the attack.

G. B.

A Study of the Leucocytes in Malaria. — Vincent, in the *Annales de l'Institut Pasteur* for December, 1897, reports the result of his studies on the leucocytes in malaria. He first counted the leucocytes at very close intervals (ten to fifteen minutes) before, after and during the chill, and came to the conclusion that, especially in the tertian and quartan forms, there was a sudden rise in the number of leucocytes just as the chill began, which lasted only ten or fifteen minutes, and was followed by a rapid decrease in their number. In investigating the qualitative relations of the different forms of leucocyte, he found that the lymphocytes became considerably increased in number, both during and after the chill, and that the polynuclears decreased in number. During the chill the large mononuclears were decreased, and the eosinophiles slightly increased. With regard to phagocytic action, this writer believes that it is the large mononuclears which mainly take up the parasite, and further, he claims to show that the parasite is not harmed at all by being taken up by the leucocyte, but, on the contrary, grows perceptibly, and remains active. G. B.

An Experimental Enquiry into Room Disinfection with Formalin. — Fairbanks and Grawitz (*Centralb. für Bacteriologie, Jan. 8th, 1898*) made a series of experiments with Schering's formalin sterilizer, using the pastiles supplied by this firm. A medium-sized room was selected, and 2 gm. of formalin was vaporized to the cubic meter of air space. Cultures of anthrax, typhoid, diphtheria and staphylococcus aureus were used, some being placed superficially and others between cloths or mattrasses. The results showed that any of these organisms were completely sterilized after thirty hours, if not too deeply hidden away. The anthrax bacillus, when placed between mattrasses, was not sterilized. The room dust contained a spore bearing bacillus which had resisted disinfection, but this was harmless to animals. G. B.

The Menapouse and the Kidney. — Dr. P. L. Gendre (*Gazette des Hopitaux, 21 December, 1897*) called attention to the rôle of the menopause in the production of certain circulatory disturbances as manifested by vasomotor disorders, and also to the marked psychical phenomena observed at the time of the menopause. In a like manner the writer believes the renal function to undergo disturbances at this period. The disturbance of kidney is particularly apt to occur in women exhibiting a neuroarthritic diathesis. Several cases are cited in support of this view. In many of the cases which have come under his observation the urine contained albumen in small quantities, which, however, on treatment disappeared. Œdema, insufficient excretion of solids and diminished quantity of urine are symptoms which have been observed associated with the menopause. Bearing the above facts in mind, attention is further directed to the prognostic importance of this influence for patients already suffering from renal lesion.

The author's conclusions may be summed up as follows:

1. In certain women, at the time of menopause, renal congestion of variable intensity occurs, as shown by the presence of albumen, diminished excretions of solids and quantity of urine.

2. These phenomena can be prevented, ameliorated or suppressed by blood letting and by a diuretic medication.

3. A previously existing renal lesion may be greatly affected by the menopause, hence the prognostic importance. A. J. L.

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ALBANY MEDICAL ANNALS

Original Communications.

SERUMTHERAPY, INTUBATION AND TRACHEOTOMY.*

TWO YEARS' PERSONAL EXPERIENCE, BASED UPON SEVENTY CASES OF DIPHTHERIA TREATED IN PRIVATE PRACTICE, MAY 18, 1895, TO AUGUST 24, 1897.

By J. L. ARCHAMBAULT, M. D.,

Cohoes, N. Y.

Mr. President, Gentlemen:

Since serumtherapy has been introduced not a case of diphtheria has come under observation without being treated with serum, less one. Every case has been written up on the very moment, at the bedside. Such notes could thus be considered as fairly exact and accurate, and bearing, in each case, a sum of information as extended as it was possible to obtain. Unfortunately for their individual merit, if there be any, time cannot permit of their reading. So while they have been carefully aggregated and tabulated, a synthetic study only can be proceeded with and submitted to your kind attention.

They number in all 70.

At first isolated and coming in from time to time, these cases became all at once numerous and pressing upon each other, owing to the epidemic from which our city suffered during the fall and winter of 1896-'97. Of the 70 cases, 50 belong to that epidemic, 12 came before and 8 after. We might say that it was for us the *looked-for scourge*, which was to afford us the opportunity of judging for ourself of the excellence of the method. Out of this total number we registered nine deaths, which represents a mortality of 12.5 per cent., certanly a result not unworthy of notice, since, very recently, at the sixty-fifth meeting of the British Medical Association, held in Montreal, August last, professor Richet (in his lecture on Pasteur) has put down the present acknowledged average at 15 per cent., and holds it to be absolutely demonstrative, convincing and satisfactory. Yet our estimates are overcharged in this sense, that in these statistics are included an unusual number of severe cases; operative cases, for instance, and other laryngeal and otherwise bad cases in the practice of other physicians, forming ground for associated work, while their lesser cases did not give such an opportunity. Were such cases to be set aside, the percentage would at once fall to the low figure of 9.5 per cent.

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* Read before the Albany County Medical Society, January 19, 1898.

Conforming to the plan proposed by the American Pediatric Society, we have classified our cases by groups, according to the time when they were serum treated:

Injected on First Day. — We had 29 cases, with 1 death; this was a case of primary laryngeal diphtheria in a child less than ten months old, which tracheotomy failed to save. But for that case we could " go so far as to assert " — after others — " that no case injected the first day need die."

Injected on Second Day. — We had 13 cases, with 2 deaths; a mortality of 15.5%.

Injected on Third Day. — Seven cases, with 2 deaths; a mortality of 28.5%.

Injected on Fourth Day. —Five cases, with 3 deaths; a mortality of 60%.

Injected on or after Fifth Day. — Fifteen cases, with 1 death; a motrality of 6.7%.

How does it happen that this fifth group shows such an unexpectedly low death rate, one coming just next after group first? All the cases, without exception, were dangerous cases. One was of sepsis and the fourteen others were laryngeal, ten of which were operated, giving one death (from extension of the membranes to the bronchi). We do not propose to explain this inconsistency of statistics, less of insisting, with regard to the laryngeal cases, upon a fact, which has been well observed, although not explained, by Messrs. Sevestre and Martin, and which is stated, upon their authority, in the very recent (1897) work upon " Diseases of Children " of Messrs. Grancher, Comby and Marfan, in the following words: " In a general way, most of cases of croup are the outcome of a *pure* and *only slightly toxic* diphtheria," * * * " and their *danger resides mostly in the larynx* and the occlusion of the glottis." Therefore, remove the obstacle, remove this mechanical danger, and your cases are given back much of the chances of your more ordinary cases.

Post-manifestations, therefore, are *not frequent sequelæ of laryngeal cases.*

It will be a repetition of other writers' experience to mention that *they are not frequent either with cases serum-treated early* in the disease. Thus, out of the 29 of our first group, we noticed but one case of desquamative nephritis, not severe and of short duration, and two cases of broncho-pneumonia, one of them followed with multiple neuritis, while in group third, and more so in group fourth, we were witness in a majority of the cases to the pernicious effects of an intense toxemia or of degenerative changes, which the serum had come too late to control or to subjugate. Case 17, for instance, which deserves to be related, offered a general degeneration — an old man at 4 years, Brightic, hemiplegic, finally eclamptic, comatose and dying with pulmonary œdema.

Again, it will bear out that other statement, that *the necessity for operative interference has become exceptional when serum is early administered*, to mention that among those 29 first-day cases we had seven laryngeal cases, *i. e.*, one-fourth of the number, one of them less than 11 months old and the other less than 10 months, and that none but this last one, already alluded to as having died of primary laryngeal diphtheria, required operation. This assertion can still be made more forcible by a short review of the laryngeal cases in the other groups. Thus: in the second-day cases, four laryngeal cases, one operated; in the third-day cases, three laryngeal cases, one operated (in this class, one not operated died, operation declined); in the fourth-day cases, two laryngeal cases, both operated; in the fifth-day-and-over cases, fourteen laryngeal cases, ten operated. You notice the progression: $\frac{1}{7}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{2}$, $\frac{5}{7}$. How many of these cases could have been saved being operated, had the antitoxin been used earlier?

Regardless of the time they were injected, two cases will claim our attention for having both been RECIDIVISTS: Irene C., 3 years, whose history embodies Cases 25 and 57, both times laryngeal, tracheotomized the first time, but escaping the knife four months later, thanks this time to timely administration of serum; and Caroline M., taken with diphtheria when 2 years old, Case 6; taken again a year after, Case 61; strumous subject, toxemia intense both times, so much more intense the second time as to bring a swift and fatal degeneration of the kidneys and nervous centres. That a child would contract diphtheria twice at a year's distance does not appear to be a fact either rare or in itself worthy of consideration, but that a diphtheria should twice occur in the same subject and in the most classical and eventful manner within a period of four months (as it did in our first recidivist), calls certainly for more than a passing mention, for it demonstrates more clearly and forcibly than is generally known of *how short a duration is the immunity conferred to a case by a first attack of diphtheria;* and it may be that not many instances of this kind are on record.

Another case, unlike, in the list, to any other, is Case 36, a diphtheria of unquestionable severity setting in in a patient already used up by an unresolved pneumonic infiltration of ten weeks' duration. Serum was luckily injected within the first 15 or 18 hours, and the child recovered nicely from both ailments, the regression of one trouble helping seemingly to stimulate the regression of the other.

There is also a group formed by one family, and which is always present before our eyes as illustrative of the *prophylactic* as well as the *curative* influence of serum, and of the importance of its early and timely administration in the one as well as in the other capacity. Here the mother and her four children were stricken down. Case 17, already spoken of, was one of them. Injected late, he died. His brother, less than 11 months, laryngeal, but injected early, was saved. His mother, too. His other brother and his sister immunized were protected, but in a partial and at a different degree, the prophylactic dose acting as a curative dose in one, while the other, having likely gone further with a commencing incubation, necessitated a second moderate injection.

As to this question of *prophylaxy*, we may, indeed, here state that of course we have had not only children *infected* and running a course of the disease, but also a number of children that were *exposed*. Of these we have carefully kept account. They number 94. Of these *exposed* 94, 75 were immunized, 4 contracted the disease, say 5.2%; 19 were not immunized, 8 became affected, say 42.1%. Indeed, a contrasting difference! Thus, when this question of immunization is yet much unsettled, these figures will point out what has been our experience.

Although no mention is made, except a couple of times, of *culture* and *biological examinations*, this method of diagnosis has not been neglected, at least as long as we had to deal with isolated cases. Once entered into our epidemic, truly, it was altogether put aside; the cases were so many, touching each other, many breaking out in one family or under the same roof; even cases of primary laryngeal diphtheria, which could have been perplexing — and we had a few — being thus given witness cases, that rendered undoubtful the true nature of the disease; the clinical evidence seemed therefore generally sufficient, and pressed on all sides by other duties, time was lacking. Besides, is it not Dr. Reynolds, of Baltimore, who advised not to rely too implicitly upon bacteriological diagnosis, diphtheritic infection having existed where only staphylococci and streptococci had been discovered (Pediatric Society, Antitoxin, 1st Report, p. 23)? It does not follow that we should neglect this form of diagnosis, but that it need not be considered as a *sine quâ non* condition. Indeed, as a matter of course it will be wise in the majority of cases to allow clinical signs to take precedence over the researches of bacteriology. In a recent communication from professor Grancher, and which appeared since this was written, we notice that this is the very standing of that learned gentleman on this question.

As to *urine analysis*, not a case at all serious has come under observation where tests were not applied. Even in the greater number of ordinary cases analysis was made. Only such cases, however, were reported that could be considered as having some clinical bearing.

As much may be said of the *pulse, temperature* and *respiration.*

Mention is also made, sometimes as a matter of form, sometimes more at length, of the *different exanthemas.* Few patients have escaped one kind of eruption or another, nettlerashed, rubeoloid, polymorphous; but even the most severe cases — and there were some almost insufferable — did not appear to have any effect or importance other than the disturbance, and even the sufferings then existing and having for their limit the time they lasted. It has not been established that the most severe cases were the ones that had received the greatest amount of serum. For instance, Case 7, who received 40 c. c., had no eruption, while some of the immunized cases, where the quantity injected did not exceed 1 to 1.5 c. c., ranked among the very worst. The concentration of the serum could not either be claimed as the cause of the immunity to the eruptions in the cases that received large doses, for throughout a serum of a one grade was used, *i. e.*, when Gibier's, 100 units to the c. c., when Roux's, 200 units. Even this last difference in potency has brought no evidence that the Gibier's cases had severer eruptions than the Roux's. We have made mention of only a few, with a view of contrasting such with other post-phenomena of really diphtheritic origin.

With regard to these eruptions arising from serum, I may be permitted a digression. This last November I made some vaccination, for it recurred to me that since lymph points are used I had witnessed cases of vaccination, followed by some sort of skin disturbances other than vacciniæ, and offering much similarity with the serum exanthemas. I made ten vaccinations, using the ten points of one tube; six were in two families of three each, and four were individual cases. All were in good health. It took well with all, and they all proved to be good, clean and sound vaccinations. On the seventh day, however, three had exanthemas, two especially as severe as any of the anti-diphtheritic serum cases; one in urticaria blotches and wheals, the two others erythematous and somewhat measles-like; two were from the individual cases, the other belonged to one of the families. I could not see why that particular one in that family had the eruption in preference to her two sisters, nor why that family and not the other. Vaccination was done by slight erasing of the epidermis, and in a way to avoid drawing blood; the points were wet and rubbed over the denuded surface. Now, lymph or serum, this does not speak much in support of *quantity*, and I do not know that it does of *quality* or even of *concentration*, for likely the ten points of the one tube were prepared at the same time and from the same source. There remains the possibility of some other factor yet unknown, if the cause is from *without*, or of some individual peculiarity just as unknown if from *within*. So much in excuse of our disregard of the different grades of serum in the use we are making of it.

The fact that we make no mention of any *accident* in connection with the administration of the serum leaves us to conclude that we have met with none; no induration, no abscess, no shock, nothing either at the time or afterwards, nothing but generally a local sensitiveness hardly ever extending beyond the first 24 hours.

As to the *kind of serum* used, the forepart of our experiences was conducted with Gibier's serum, and later on, when the epidemic prevailed, the Board of Health having selected to use Roux's serum, the result was the gradually almost exclusive use of this serum. A careful study of all the cases does not fail to demonstrate that results obtained were quite alike, whichever serum was used. There remains to establish that these results might have been improved upon had serums from other sources been used. On many occasions and in several reports claims have been made of the excellence, the superiority, the almost indefectibility of certain products in contradistinction of all others. Possibly, in reporting the comparative tests made, was the fact too easily or too voluntarily forgotten that the different serums might not have been of the same age, and that, whatever their quality, no means have yet been found to keep them from deteriorating. It seems understood now that the higher their potency the more rapidly they lose their antitoxic power. At any rate, quoting the words of quite a recent communication (*Medical News*, Oct., 1897), " it has been recognized for some time that tests (for the estimation of the potency of antitoxic serum) are very unsatisfactory and unreliable," and fraught with the danger of leading to erroneous conclusions. To emphasize his statement the author of the article tells of the expedient he resorted to of dividing a bottle of serum in four equal parts and sending each to four different bacteriologists known as having large experience in testing antitoxin. You have read the article and know the reports. Not two alike! They oscillated between 100 and 250 units to the c. c. Oftentimes, therefore, it may be safe to lay the discrepancy clamored by some observers to rivalry and to a spirit of competition in this as in almost everything rife, eager and overzealous.

If we consider now the *doses of serum* employed, it may prove instructive to indicate, at least, the extreme doses, their number, their effect and their relation to the age of patients. Thus Case 46, an infant less than 10 months old, receives, in five injections, an absolutely heroic dose, 6,600 units; timely administration, no apparent effect, the child is operated and dies fifteen hours after. Case 16, child 22 months old, other laryngeal case, receives, in two injections, 5,600 units; no effect, operation declined, death 34 hours after beginning of treatment. Case 50, 6 years old, croup, receives, in three injections, 6,000 units; tardy administration, kidneys already involved, the child is operated, but dies from pharyngeal paralysis and *pneumonia of deglutition.* Cases 37, 45 and 58, laryngeal cases, of same age (6 years), are given from 5,800 to 6,000 units each, in two or three injections; with the three late administration, either a few hours before or at the time of operation; with the three recovery, no after effects attributable to antitoxin, Case 45 alone showing a broncho-pneumonia already in progress when injected. The same with Case 7, boy, 3 years 4 months old, operated, and then receiving 8,000 units in three injections; operated, injected, recovered! On the other hand, two of the cases more worthy of our attention, one dying with overwhelming complications, the other saved after any amount of uncertainty, received nothing over the most ordinary doses of antitoxin, 2,000 and 1,200 units respectively. The case of 2,000 is that Case 61 mentioned before as one of our two recidivists. The case of 1,200 is Case 32, signaled in the first group as having had broncho-pneumonia, followed by multiple neuritis.

We felt like demurring very much over this Case 32. The initial trouble had been so slight and the local lesions so insignificant, that the question was impressing itself upon our mind whether the almost fatal complications really resulted from the original disease or were not rather to be charged to the use of the serum — *as serum* or *as antitoxin* — although the dose had been an ordinary one. Happily for the serum, the tube which had been used for this patient still contained 800 units of antitoxin, which soon after — in the course of an hour — were utilized in the treatment of the next case, a child 16 months old. Eight hundred units, or 4 c. c., were for this baby a comparatively much larger quantity than 1,200 units, or 6 c. c., for a child 5 years 4 months of age; yet he had a recovery astonishingly rapid and free from any setback.

Thus this fortuitous occurrence cleared up any doubt that could have existed. And presently it did more — it conferred to the case a sort of medico-legal importance. Should an instance of this kind be brought before the court — and it is not unlikely that at some moment it could — the serum being liable to be tested there as so frequently it is in the press — it would not appear impossible for this *twin case* to furnish, to the expert, a tolerably good argument in exoneration of the nocivity of this form of therapeutics.

Naturally, in the matter of *treatment*, we did not confine ourself to serumtherapy, although two cases in the series, both laryngeal, one operative, both recovered, received no treatment whatever but the antitoxin. We continued in the use of previous methods known to have given good results. No direct local applications, however, are ever used — no swabbing, no irrigations — which to be of any good must be very frequent, *i. e.*, every hour or even half-hour, most of the time to the great torment of the patient. But we make free use of inhalations by saturating the air of the room with aromatized vapors, utilizing for the purpose, among the poor, the kitchen stove and the wash-boiler. To illustrate our regret of the impracticability of certain local measures, take, for instance, the several Loeffler solutions, which, some are telling you, should be considered essential, indispensable, * * * on the condition, however, that the physician himself makes the application, for it is a care one cannot leave, for the sake of its efficacy, with the attendants, neither with the mother, nor with the nurse, unless this nurse is knowledge and skill in person and one you can trust as well as yourself. When do you meet such a qualified subject, particularly in the care of diphtheria, which especially prevails among the poorer classes? Rather then than wasting time with semi-measures, of which the lack of efficacy is only equaled by the amount of annoyance caused the patient, better leave such practices aside. At least, such has been our experience. Internally, while perfectly aware of the admirable plan of treatment set forth by Jules Simon in his lectures, and knowing of none superior, we have made it a sort of routine work, because of satisfaction given, to simply and freely prescribe the tincture of iron and the quinine sulphate in glycerine solution. Few are the cases where this treatment has not been used. We also frequently make use of mercury, particularly in treatment of laryngeal cases. Is a case croupy without stenosis, at once repeated fractional doses of calomel, while serum is injected; but does it become necessary to operate, iron is without delay substituted to it, on the belief that now it becomes more important to brace up, than to modify or alterate, the vital energies of the patient. While serum was yet unknown, we had learned to rely with a fair confidence upon the use of calomel, and to consider it, when combined with lime vapors, as about the less unsatisfactory treatment of croup. The mercury treatment of croup has no greater advocate than Jacobi, whose name, of course, is authority on both continents; yet our successes have been too very limited — while our experience has been considerable — with the mercury treatment to prefer it to iron, even on the authority of such a name, after a case has become operative. More recently a new way of administering mercury has been recommended — by sublimation of calomel or calomel fumigations — a very easy method; we have used it for instance, in Case 15, although here without benefit.

If we turn now to the *laryngeal cases* we notice that, among our 70 cases, these laryngeal cases amount to 31, certainly an unusually large number. Indeed, 31 laryngeal cases in a series of 70 cases of diphtheria is entirely out of proportion, and would not be currently met with in any one practice; we owe, as we have said, its occurrence to other physicians having kindly combined some of their work with our own.

Fifteen of these cases of croup were operated.

Sixteen were not.

Of the 16 not operated must be excluded one not treated with serum. Among the remaining 15 not operated cases we have one death, the fatal end being due to stenosis; operation declined. Here then are 14 cases where the larynx was invaded, notably three where stenosis was very marked, with evidence of dyspnœa and drawing, Cases 34, 41 and 49; all recovering without operation, and where it is difficult to deny the merit of the cure to serum, Case 34, for instance, receiving absolutely no treatment besides serum. In other words, 30 cases of croup, half of which were not operated, and, less one, were cured, a result not equaled, I believe, by any of our previous therapeutic methods.

Of the 15 operated cases — representing over one-fifth of the entire number of cases — there are 11 recoveries and 4 deaths; that is, a mortality of 26.7%.

This mortality is somewhat less than the one, just published, of the general hospital of Hamburg-Eppendorf, which is said *to have reached* in such operative cases, since treated with serum, *its lowest ebb* at 29.5%.

There may be an interest to point out *the time* — at least the extreme time — *the cannula remained "in situ"* in these operated cases.

Of the cases that died one survived 2 days 10 hours; that is the longest; and one but 15 hours; it was that 10-months baby taken with primary diphtheritic laryngitis.

Among the cases that recovered the shortest time the cannula remained inserted was 1 day 22 hours; the longest, 6 days 16 hours.

We may here state, incidentally that before serum treatment the shortest time of retaining a cannula we ever could put on record was five days, while a number of cases required not less than 10 and 13 days.

As to the *kind of operation*, in these 15 cases we only once resorted to *intubation*. The family formally opposed *tracheotomy*, otherwise this last procedure would have been selected in preference. As it was the case got well, although it retained its tube 6 days 14 hours, which is only two hours less than the most protracted of our other cases.

This marked preference for tracheotomy, when intubation is so much in vogue, may be hard to justify. It finds at least some explanation on what seems to be our experience in private practice, at least on what has been my personal experience, and on the study of some of the objections formulated against intubation, and to our mind not without foundation.

I certainly wish to first and deliberately grant that the preponderance of the O'Dwyer's method is nowadays absolute, at least in the United States, and to express our wonder at not being carried away with the general enthusiasm.

And yet it is not that we ever were embarrassed with the difficulties of the operation, for it can be considered a relatively easy procedure. While we never had an opportunity to practice on the cadaver, we fortunately never failed to succeed on intubation. Even at the period of extraction it was our good fortune never to meet with trouble.

Again, let us admit how rapidly intubation is performed. After a little training nothing can be compared to its swiftness; in a few moments, when the gag is once in place, the tube is inserted. In a case of emergency, less than in tracheotomy, we need the assistance of one or two confrères. It thus happened that we did once intubate with no other help than the father and a neighbor.

Finally, the manœuvre being bloodless, the consent of the family is more readily given, and the operation being thereby more timely, is consequently performed under more favorable conditions.

(*To be concluded.*)

DIPHTHERIA AS WE KNOW AND TREAT IT TO-DAY.*

BY T. KIRKLAND PERRY, M. D.,
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Mr. President and Gentlemen:

It would seem almost absurd to ask busy men, men thoroughly versed in every department of their profession, to give even a portion of their valuable time to the consideration of a topic so old as to be antiquated, so much discussed as to be hackneyed, were it not that the ever-present germ were a menace and source of solicitude not only to the profession as a whole, but the great public whom we serve. The disease is of so serious a nature, so insidious in its approach, so treacherous in its termination, so widespread in its diffusion, so frightfully fatal in many of its outbreaks, as to demand from the profession the most serious consideration and frequent consultations, particularly when such tend toward an elucidation of the subject and amelioration of the conditions. I shall, however, refrain from wearisome historic detail, nor will I attempt to unload my limited knowledge of the scientific aspect of the case. Text-books, monographs, periodicals, pamphlets, and even the daily press fairly teem with such, and you are doubtless surfeited. The practical side of the question appeals most strongly to us at this time, and to that end I briefly call your attention. It is a fact, which I presume none will deny, that notwithstanding the many and rapid advances in all departments of our profession, and the almost kaleidoscopic changes in the hygiene, sanitation and technique of the sick-room, yet in this particular instance, notwithstanding the marvelous increase in methods and appliances, and the almost bewildering array of therapeutic agents, old and new, there has been so slight a gain in the mortality rate that the practitioner of 1865 could hold his own with his more modern and favored colleague of '75, '85 or even '95. And if it could be argued that during these years the mortality rate had been steadily lowered, it could readily be traced, not so much to the advancing knowledge and skill of the physician, as to the wonderful strides in sanitation, upheld, as it has been, by wise legislation and beneficent laws. The very position we have all these years occupied in this matter must convince the most skeptical of the error of his ways, and prove the futility of longer continuing. We have profited greatly (or our patients have) by reason of our advanced knowledge of typhoid fever, typhlitis and perityphlitis, peritonitis in its various aspects, syphilis, etc., but with diphtheria we seem to have been at a standstill. And this brings me to speak of the present status of the subject as applied to our city. It would seem almost incredulous, with the mass of accumulated evidence relative to the almost miraculous virtues of antitoxin, that any practitioner could be found so wedded to his old ideas, so immovable and fairly welded in past beliefs and present skepticisms, as not to be willing to yield to the voices and proofs of thousands of his own colleagues advocating this and this alone. But facts warrant the statement that such is the case. The time, however, is very close at hand when the serum treatment of diphtheria will be as universally advocated as is vaccination to-day. It is said by those not particularly conversant with the matter that it is new, untried, powerful, dangerous; that its use should be greatly restricted, in fact, only to be used in extremis. So far from this being true, the opposite is the case; it is so harmless as to be practically innocuous. Statistics give the number of injections up to date at about one and one-half million, with no accidents worth recording, and if such have occurred, it could be traced to improperly prepared or too long kept material. The very harmlessness of the treatment, the simplicity of the method, the quickness and almost painlessness of the injection, commend it, if nothing else. It has been the experience of the writer to have witnessed every epidemic of diphtheria that has visited our city during the past 25 years. Some have been fearfully fatal. I have known two and even three deaths to occur in one family in the short space of as many days, and this despite the best medical skill available. I have personally tried every known remedy, external and internal, tonics without number, stimulants without stint, sprays, powders, washes, swabs, gargles. I have used sulphuric, sulphurous, lactic, acetic, hydrochloric, carbolic, gallic and tannic acids; solutions of argentic nitrate and corrosive chloride of mercury; tinctures of iron and iodine; sprays of peroxide of hydrogen, pyrozone and lime water; powders of sulphur lotum, lycopodium, borate of soda and papoid; internally, heart stimulants of every description, only to meet in many instances disaster and defeat. And if per chance victory perched upon my banner, it was only after the longest, most wearisome and anxious of fights. Thanks to the patient plodders in the laboratories of science, all this is changed, and we are entering upon an era second only to Jennerism. In proof of the foregoing, and to still further substantiate the evidence of hundreds of observers all over the world, many of whom have witnessed perhaps one hundred trials to my one, I offer the following: On March 4, 1895, I was called to see a rugged boy of three years, sick 24 hours. Vomiting, high fever and rapid pulse, and the fauces, tonsils and soft palate well covered with exudate, were the conditions presented. I diagnosed diphtheria and resolved to give the then entirely new remedy a trial. Antitoxin had not at that time been prepared in this country, and our pharmacists had not as yet procured the imported. Our city had been singularly free from this scourge for many months. Behring and Roux had scarcely more than formulated their results. The whole matter was new and almost untried. No instrument had been devised for the special purpose of inoculation save that of Koch's (a most grotesque-looking and decidedly unwieldy affair). However, knowing that Dr. Hun had made one or two injections in patients at St. Margaret's House but a few days previously, I sought his aid, and he kindly loaned me a vial of Behring's No. 2 and his Koch's syringe. In the meantime Dr. MacFarlane had made a culture test and pronounced the case one of pure diphtheria, and I proceeded to give the serum a trial. The delay in accomplishing these various details was more than 24 hours, and the child had grown decidedly worse; and I will add right here that this is a serious mistake, the having to wait 24 hours for a bacteriological report. My patient had been given brandy water freely, also milk, water, broths, etc., all we could urge, and therapeutically chlorine water, one drachm, every two hours. Not another thing had been done, as I resolved it should be serum or nothing. The injection was made with some difficulty, owing to the character of the instrument used; otherwise everything went along smoothly. I continued stimulating treatment and waited results. Twenty-four hours later there was slight improvement; the neck was not so swollen, the nose was discharging less, vomiting ceased, but the deposit was still abundant. Twenty-four hours later there was marked improvement in every way; the child was looking bright, swallowed readily, seemed hungry, and the deposit was gradually disappearing. The future course of this case was uneventful. No change was made in general treatment, no more serum used, and the child made a perfect recovery, with no sequelæ. I desire to call special attention to this case, as I have every reason to believe it was the third trial the antitoxin had in our section, and it is nearly three years since this record was made. My experience and convictions regarding the efficacy of this method began almost, as you see, at its inception. I have never for one moment since had a doubt. Believing then that this would be my future practice, I had Messrs. Tiemann provide me with a suitable syringe, and while as the time has passed and experiences have ripened, and many styles of instruments have been devised, I still think the one I had made at the time answers every purpose, and has this one advantage, that the capacity is between 30 and 40 c. c., and, as all who have had considerable experience in this matter have discovered, this, to both child and operator, is an important point, as it will frequently happen that from 15 to 30 c. c. are needed at once, and none of the new instruments that I have seen will hold this amount; consequently two or more insertions of needle have to be made. My second opportunity to test this wonderful agent came some weeks later. A young mother with two children, three and one-half and one years, had come from a neighboring village to visit relatives in our city. Her physician had treated the baby for sore throat a day or two before leaving home. The child had grown worse and she called on me. I found the baby dying from laryngeal diphtheria, and in fact it lived only about five hours. I saw no reason for antitoxin or intubation, so made no effort. The girl three and one-half years old seemed perfectly well; however, I thought best to give some treatment, and prescribed chlorine water, one drachm, every three hours. About one week had elapsed, and mother and child had gone to another relative's in the southern part of the city, when I was summoned. I found every indication of diphtheria and made immediate preparation for bacteriological examination, and sent to the Board of Health for antitoxin, procuring Behring's No. 2. The laboratory report was true diphtheria. Antitoxin was injected, and the same treatment pursued as in preceding case. Recovery perfect and speedy; no sequelæ.

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* Read before the Albany County Medical Society, January 19, 1898.

Case 3.—A female child, two and one-half years, had been sick one week, with irregular fever, vomiting, diarrhœa and several spasms. There was no suspicion of diphtheria, as none had existed in the neighborhood for many months. I did not examine the fauces until the swollen neck, discharging nose and decidedly anxious condition of the child excited my closer attention. I found the throat filled with exudate, and no doubt I had lost 48 hours of valuable time. I resolved to make amends by immediate injection of 2,000 units New York Health Board serum, and hear laboratory report later. I began at once with liberal brandy water and supporting measures, and tried chlorine water. The stomach was so irritable that this latter had to be discontinued, and nothing but brandy water, diluted milk and weak broths in very small quantities were attempted. There was no perceptible improvement for 48 hours. Vomiting continued at intervals; a profuse diarrhœa made its appearance; the child was very restless and irritable, and I had about given up hope, but resolved to give another 1,000 units of serum. The laboratory report in the meantime was true diphtheria (in fact, no other conclusion was possible). An injection was given, and the results were awaited with great anxiety. For another 48 hours no special change was noted, although the fact that the baby was alive meant something. Little by little as the days went by improvement was manifest, and eventually recovery was complete. The sequelæ in this case was marked and long continued; paralysis of muscles of tongue, palate and pharynx, also of lower extremities, with entire abolition of tendon reflex. Case 4. — A male child, two years old, had been sick 24 hours; there was every indication of diphtheria, and the laboratory report confirmed the diagnosis. One thousand units New York Health Board antitoxin were injected and the usual treatment continued. Recovery speedy; no sequelæ. This family had buried a child from diphtheria three years before, and I had been the attending physician. Case 5. — Female child, two and one-half years, sick 24 hours; deposit abundant. I made no attempt at culture test, as I could not wait so long for a report. I injected 1,000 units New York Health Board antitoxin and began supporting treatment. In 48 hours the patient had not gained perceptibly, and I used another 1,000 units. A circumstance occurred at this time which I mention, as it bears on the question of frequent injections at various parts of body. The plunger of my syringe had become disarranged, and I had no time to get it repaired or obtain a substitute. I therefore used my pocket hypodermatic syringe, which holds about 30 C. M. As the vial of serum contained about 12 C. C., it will be seen that to inject it all meant seven separate insertions of the needle. I did this as speedily as possible, using as may different spots on the back and nates. The child paid very little attention to the matter, and cried no more than it would have done if an examination of the throat were made. In 24 hours marked evidences of laryngeal diphtheria came on, and I had serious thoughts of intubation. I applied a hot pack to the throat and directed inhalations of dilute acetic acid, 1 to 8. I saw patient early in the morning and found no improvement; continued treatment and injected a third 1,000 units. In 24 hours there was a change for the better, and entire recovery followed. This patient had no marked sequelæ, save a condition which closely resembled the so-called angio-neurotic œdema, which was no doubt due to frequent injections, and not to the antitoxin itself. Case 6. — Girl of 11 years; amount of deposit very great; nose filled and discharging. Neck swollen, vomiting frequent. Two thousand units were used, and supporting treatment as before. Recovery perfect; no sequelæ. Case 7. — Boy of 13, brother to above patient, apparently sicker than his sister, but not showing so much deposit. Laboratory report, diphtheria. Two thousand units used, and recovery perfect. Case 8. — Male child, aged 3, sick 48 hours, laryngeal diphtheria. Saw no hope for result, but gave 2,000 units and sent for Dr. Hailes, who thought intubation would be of little value, as delay had been too great. Child died about 12 hours after my first visit. Case 9. — Male child, aged two years; diagnosis, laryngeal diphtheria. One thousand units used; throat constantly bathed in steam from hot woolen cloths; inhalation of dilute acetic acid every hour, night and day, and calomel in one-grain doses every three hours. For one week this course was pursued, a second 1,000 units being used in the meantime. No attempt at intubation was made, and recovery was complete. Case 10. — Young man of 17; throat and nose filled with exudate, neck greatly swollen, vomiting at intervals, and nose-bleed frequent and profuse. One thousand units were used; chlorine water, one drachm, was given every two hours, and whiskey *ad libitum.* Recovery was slow, but complete. Case 11. — A young miss of 14, sister to above. Constitutional symptoms marked; amount of deposit very great. One thousand units injected, and same general treatment as in other cases. Recovery was perfect. Case 12. — Boy of 5, very sick, high fever, rapid pulse, vomiting. Fauces and soft palate covered with exudate. Laboratory report, diphtheria. One thousand units were used, and nutritive treatment pursued. Recovery rapid. Case 13. — Girl of 3, sister to above, symptoms pronounced. One thousand five hundred units of Roux' serum were used, as I could not procure New York product at the pharmacy where we sent. Recovery was speedy; no sequelæ. Case 14. — Boy of 3 years, laryngeal diphtheria. Two thousand units were used as soon as possible, but I saw no hope. The child died in a few hours. Case 15. — Boy of 8, sick 48 hours, throat filled with exudate. Laboratory report, diphtheria. I injected 1,000 units New York serum, and gave stimulating and supporting treatment. Recovery was speedy and perfect.

I come now to a group of cases that are exceedingly interesting, because of the forcible illustration witnessed as between the old and new methods. There were four children in this family, aged nine, seven, five and two and one-half years. I had officiated at the birth of each, and had been the only physician employed for ten years. Owing to some trifling misunderstanding they saw fit to change their physician. However, diphtheria made its appearance in their household, and the new doctor was called. It was the old story of swabs, powders, sprays, etc. The patient was their only girl and second oldest child; she lived five days. The health officers fumigated thoroughly, the two youngest children had been sent away, and it was thought there would be no more trouble. One week had passed, when the child at home, aged 9, was taken violently ill. I was summoned, told of recent troubles and requested to take charge of the case. The boy was vomiting almost incessantly, had high fever, rapid pulse and profuse diarrhœa. I found no evidence of deposit in fauces, and so treated the case on general principles, and in from six to eight days he seemed to have recovered. Whether the poison of diphtheria was in his system and was eliminated by the very violent action of the entire gastro-intestinal tract, I do not know; certain it is he was a very sick child, and recovered without showing any external evidences of diphtheria, nor did I use antitoxin. I was about discontinuing my visits when the baby, two and one-half years old, was sent home suffering from violent diphtheria. The deposit was on both tonsils, soft palate and pharynx, and there were vomiting, high fever and great depression. I sent at once for serum and injected 1,000 units. The treatment otherwise was supporting and stimulating. Twenty-four hours later no marked improvement, and I used another 1,000 units. Improvement was noticed during the next 24 hours, and after a few days the child was considered well. While this case was in progress the fourth and last child was sent home from an aunt's with all symptoms of violent diphtheria. I injected 1,000 units of serum and pushed the stimulants. Twenty-four hours later I used another 1,000 units, and from this time the case rapidly improved and completely recovered. In none of these cases was there a sequel. The last case to which I will call your attention is in itself a testimonial to the value of antitoxin. A more formidable case I never encountered. The tenacity with which the poison remained in the system notwithstanding my every effort, the utter prostration and helplessness of the child, our inability for many days to keep nourishment enough either in stomach or rectum to keep alive the vital spark, stamp the case as one that would, under the old method, have unquestionably succumbed. The patient was a rugged boy of five years, sick 48 hours when I was first called. The amount of deposit was very great, and constitutional symptoms were grave from the start. I injected 1,000 units at once, and begun the usual treatment. Owing to the very great irritation of the stomach he was obliged to discontinue everything but ice, and this he lived on. We endeavored to use small quantities of milk, in whch was mixed the white of egg, per rectum, but after several injections, four hours apart, everything was rejected, and we gave up trying for a day or so, simply bathing him with alcohol and occasionally managing to get a teaspoonful of brandy well diluted into his stomach and having it retained. Twenty-four hours after first 1,000 units had been used

I repeated the amount. The deposit seemed to be less and had a better color, but the general condition of the child did not improve. I hesitated about using a third injection too quickly, as the patient was so prostrated. I began the use of somatose at this time both by stomach and rectum; by the use of very small quantities, not too often administered, it was retained. Nearly two weeks elapsed from the date of my first visit before I began to feel in the least hopeful. We could not get either nourishment or stimulant in the child to sustain life, and the fauces were still partly covered with exudate. I resolved to give another 1,000 units, as matters could not be much worse. I did so, and before another 24 hours had elapsed a marked change for better was apparent. It would seem as if we had required just about this amount of antitoxin to help us out; at any rate, this marked the beginning of recovery. In noting the sequelæ in this case there was nothing left out; paralysis of muscles of tongue, palate, pharynx and eyes; strabismus continued for about two months, and complete paralysis of lower extremities, with total abolition of tendon reflex, also resulted. The case is still under observation. This, Gentlemen, completes my list and comprises my experience with the antitoxin treatment of diphtheria to date: 18 cases, 28 injections, and a total quantity of serum equalling 32,000 units of strength and measuring about 11 ounces. No accidents, no mishaps, no sequel, not a death. The cases were all of a serious type, and many of them almost malignant. The laryngeal cases that died could hardly be considered factors in the summing up, as they were "*in articulo*" when first seen. In treating these cases the serum was given alone; not a remedy was used or allowed, either external or internal, and whatever of credit attaches to the results must be given to the antitoxin. As placebos of all kinds are, and have to be, used in the sick-room, I have for years in this class of work used chlorine water freshly prepared. It is as good as any other subterfuge, and perhaps better than some, as there is undoubtedly a certain amount of therapeutic value in the article. If now one reverts for a moment to the treatment heretofore employed, and draws a pen-picture of the frightened, struggling and crying child, gagging, spitting and even vomiting at each attempt to examine fauces and use remedies, the process of course having to be repeated, and repeated, and repeated, the terrible dread of the parents at each renewed procedure, their great anxiety and distress, the physician's own trepidation and great uncertainty as to the results; and then contrast this with the quiet sick-room of the present day, made so by the physician's own confidence and reassuring words, by his few and comparatively infrequent visits, by the ease and quickness with which he performs the slight duty of injection. No struggling patient, and if so, but for a moment's time, and probably never again for the same purpose; no more spitting, and gagging, and vomiting; no more prying open those little jaws, clenched almost in the agony of death; no more sprays, nor swabs, nor gargles — I could almost add, no more undertakers. If there still remain those in our profession who cannot as yet quite conclude to follow out this treatment in its entirety, I can conceive of but one reason, and that is the great fear that they, too, by a strange coincidence, may be compelled to take refuge under a banner, the motto of which will read, as does that other which for years they may have ridiculed and derided, viz.: "*Similia similibus curantur.*"

174 SECOND STREET.

For the ANNALS.

OBSCURE DENTAL IRRITATIONS AS A CAUSE OF FACIAL NEURALGIA.

BY GEO. A. SULLIVAN, D. D. S.,
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Facial neuralgia is one of the most obstinate and distressing conditions that the physician is called upon to treat. A knowledge of the various dental irritations, and particularly the diseases of the dental pulp, must be of value to the medical profession, and assist very materially in establishing the etiology of this affection.

Caries of the teeth is the most common cause of facial neuralgia, and is easily recognized, but it is to the obscure cases, and those which appear to have no dental origin, that I wish more especially to call attention.

The pulp of a tooth, when irritated or in a diseased condition, will respond very promptly by a sense of pain, but this pain may not be localized, it may be reflected to the ear on the same side;

to the infraorbital foramen and other parts supplied by branches of the fifth nerve. A patient can seldom locate with reasonable certainty a single diseased pulp among the teeth by a sensation of pain alone, but can only refer the pain to a given side of the face.

The hidden sources of irritation producing facial neuralgia can be embraced under the following heads: Hyperæmia, Inflammation or Suppuration of the Pulp; Pulp Nodules or Pulp Stones; Impacted Wisdom Teeth.

Hyperæmia or inflammation of the pulp is the most common condition we meet; it is caused by deep-seated caries and by metal fillings placed in close proximity to the pulp. When in a hyperæmic condition, a pulp is extremely sensitive to thermal changes; marked increase or decrease of temperature of the tooth will cause severe pain; the patient will frequently refer the pain to the ear, but a close study of the symptoms will connect its onset with some thermal change, produced most often during eating.

Suppuration of the pulp is of very frequent occurrence. It is caused by deep caries extending into this organ, and exposing it to the invasion of bacteria from the saliva. The destruction of the pulp proceeds in some cases very slowly, producing more or less inflammation and some pain. The severe cases of neuralgia occur when fillings are inserted in cavities of this character. The opening into the pulp is sealed up, and the escape of the gases developed during decomposition is prevented. The pressure of these gases on that portion of the pulp remaining unaffected by suppuration will produce considerable pain.

Two very interesting cases of facial neuralgia caused by suppurated and putrescent pulps have come under my notice during the last six months, and in neither case were dental irritations suspected of being the source of the trouble. The first patient — Mrs. G., a middle-aged woman — called to have her teeth cleaned and a small filling inserted. An appointment was made, which was broken on account of illness. At the next appointment Mrs. G., in referring to her illness, informed me that she had suffered for several years with a very painful facial neuralgia, which frequently confined her to her bed for days at a time. The pain would start in the occipital region and affect the whole side of her head and face. Upon a thorough examination of the teeth on the affected side, I found a painful response from the first superior molar. This tooth held a very large metal filling. My patient told me it was filled ten or twelve years ago, and never gave her any pain. The filling was removed, exposing a putrescent pulp. After cleaning out all septic matter and treating the root canals until they were in a thoroughly aseptic condition, the tooth was filled. Since then she has had no return of her neuralgia.

The second patient, Miss V., called to have her teeth examined and cleaned. Upon examination I found two teeth with pulps suppurated. I asked her if these teeth gave her any pain, and received a negative reply. I concluded that there must have been some pain, and inquired about a neuralgia affecting that side of the face. She told me that she suffered from neuralgia for several years, but it did not come from her teeth, as they had been frequently examined to determine if they caused her trouble. Miss V. added: " My physician informs me that I am of a neuralgic diathesis, and unfortunately must endure it." Since the treatment of these diseased pulps and filling of the teeth she has exposed herself to the worse atmospheric conditions without suffering the least pain.

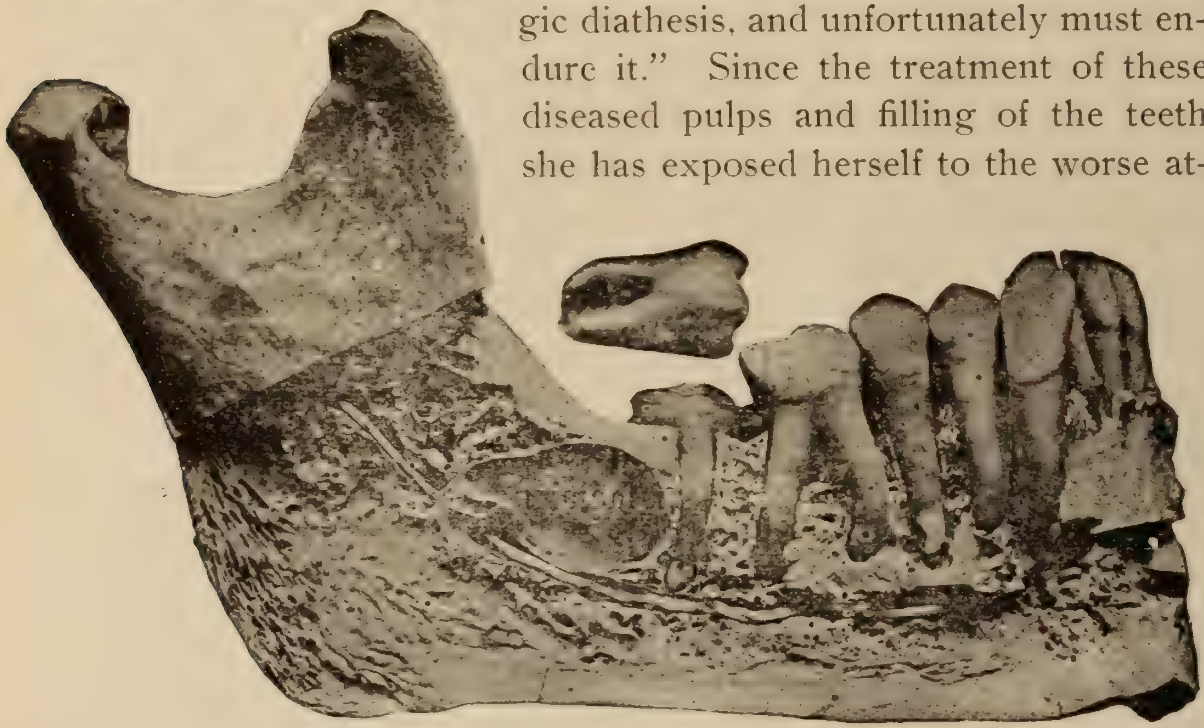

Fig. 1.

Pulp nodules or pulp stones sometimes produce facial neuralgia, and their presence is very difficult to determine. They are found in teeth of persons past middle life, and are often caused by the wearing down of the crowns through mastication. Irritations due to clasps will also cause their development.

Impacted wisdom teeth are occasionally the cause of facial neuralgia and very difficult to treat. These teeth press against the root of the adjacent molar, producing absorption. The absorption goes on until the pulp is exposed, and its death follows. The crown of the second molar may not be decayed, and it is hard to determine which tooth is causing the pain.

Figure No. 1 shows a case of impacted wisdom tooth, with the tooth removed showing the absorbed root of the second molar. This certainly caused neuralgia.

Figure No. 2 shows another case of impacted wisdom tooth. A slight absorption of the root of the second molar has taken place.

The failure of a wisdom tooth to appear at the proper time might give rise to a suspicion of impaction, and an incision or probing would be the means of diagnosis.

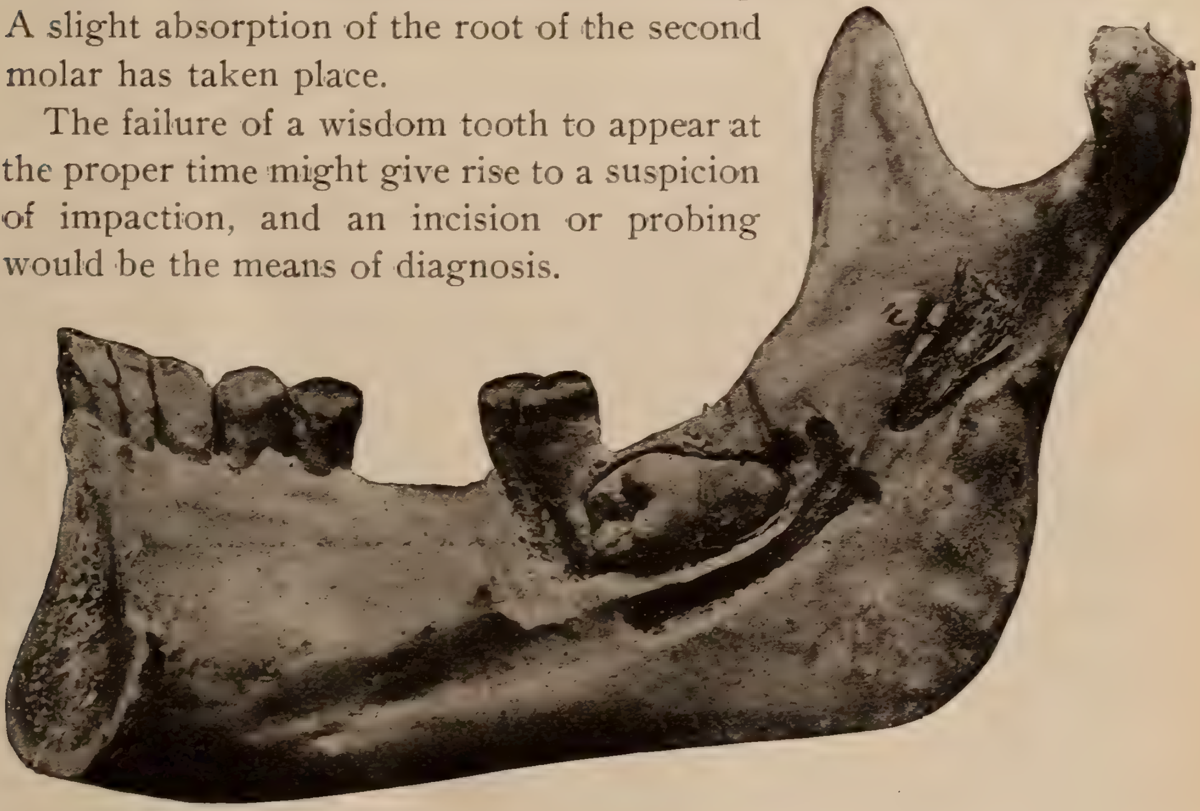

Fig. 2.

The diagnosis of pulp stones is quite difficult. They can be looked for in a certain type of tooth, usually those that are short, worn down by excessive wear.

Hyperæmia, inflammation or suppuration of the pulp is easily detected by subjecting the suspected tooth to decided thermal changes. This is best done by the impact of a stream of warm or cold water successively to each tooth of the affected side. Pain will be immediately felt when the diseased tooth is flooded.

18 DOVE STREET.

Clinical and Pathological Notes.

Mikulicz Abdominal Tampon, with Histories of Three Cases.

FROM THE SURGICAL SERVICE OF THE ALBANY HOSPITAL.

Case I. — Miss V. P., colored, aet. 46; single; housewife; nativity, United States. *Diagnosis.* — Large multiple uterine fibroids, with many pelvic adhesions and bilateral ovarian cysts. Abdominal hysteroctomy without clamps, *September 25, 1897.* Cyst on right ovary ruptured during removal and contained a quantity of dark semi-solid material; general oozing from breaking up of adhesions; considerable blood lost. Mikulicz drain inserted. Incision closed with through-and-through sutures of silkworm gut.

Subsequent History: Recovered well from shock of operation with free use of stimulants. *Second day:* Abdominal distension began, associated with pain and distress in the abdomen. Calomel, salines and enema failed to produce movement of bowels. On the *third day* the drain was removed and drainage tubes inserted. Repeated efforts to secure movement of bowels with salines and enemas failed, though some flatus would be expelled through the rectal tube. Distension became excessive, vomiting greenish fluid, which two days later had a marked fœcal odor. *Fifth day:* Condition as above, and in addition complete anorexia, and pulse much weaker. Restlessness. All efforts to move bowels failed, and patient died at 7:30 P. M.

Diagnosis of adynamic obstruction of the intestines verified by the autopsy.

Case II. — Mrs. R., aet. 44; married; housewife; nativity, United States. *Diagnosis.* — Large ovarian cyst of right side, with many pelvic adhesions. *Removed* November 12, 1897. Ruptured during removal and filled with gelatinous material. General capillary oozing from rupture of pelvic adhesions; abdomen flushed with saline solution; secondary hemorrhage as last suture was about to be tied; wound reopened, bleeding vessels secured, and Mikulicz drain inserted.

Subsequent History: In the next 48 hours patient suffered severely from shock, which was successfully combated by subcutaneous saline transfusion and stimulants. Drain removed at the end of 48 hours and drainage tube inserted, followed by nausea and vomiting, abdominal pain and moderate distension. Pulse remained rapid and weak for several days, and though cathartics and enemas were repeatedly employed after the third day no movement of bowels resulted until the fifth day. This was followed by diarrhœa, and the stools, which were often passed involuntarily, were small, dark in color, and had a very offensive odor, the usual number being from eight to twenty dejections in twenty-four hours. This condition of the bowels continued until patient left the hospital, sixteen days after the operation. Otherwise she was in good condition. Since that time I have learned that she has completely recovered.

Case III. — Mrs. M. W., aet. 35; married; housewife; nativity, United States. *Diagnosis.* — Old tubal disease, and pelvic adhesions as result of repeated attacks of pelvic peritonitis. Patient very anemic. Pulse weak. *November 23, 1897:* Uterine appendages removed through abdominal incision, and the adhesions which simply formed a mass in the pelvis were "broken up." General capillary oozing resulted. Mikulicz drain inserted and incision closed in usual manner.

Patient did badly under anæsthetic, and repeated stimulation and transfusion were necessary to overcome the shock. Drainage removed at end of 48 hours, and patient went on to complete and uneventful recovery, and left hospital at the end of three weeks.

Mikulicz Tamponade of the Peritoneum. — *Mikulicz* first described this method of abdominal tamponade in a contribution to the German surgical society, "Ueber die Ausschaltung der todten Räume aus der Peritonealhöhle, etc." (*Verhandl. der Deutsch. Gesellschaft für Clin.*, p. 187, *et seq.*, Berlin, 1886.)

Pozzi describes its method of application as follows: "Mikulicz advises the insertion, in the first place, in the cavity to be tamponed, of a pocket formed by stuffing in a piece of 20% iodoform gauze. To the center of this piece of gauze is attached an antiseptic double silk thread, by means of which it may later be withdrawn. To save time, this should be arranged before the operation; the gauze when in place looks like a tobacco pouch.

Five or six long strips of iodoform gauze are now stuffed in and spread over the whole surface of the cavity; their ends project from the gauze pouch, and with it emerge from the lower extremity of the abdominal wound."

According to the same author, the "tamponade should certainly be reserved for exceptional use, an '*ultima ratio*,' either for parenchymatous oozing (hæmostatic tamponade), or in case of threatened septic infection (protective antiseptic tamponade)." The first of these two indications is well represented by the above three cases which I have observed in the hospital in the past four months. The advantages claimed for this form of tampon by its advocates are that it acts both as a tampon and drain, and favors by its presence the distinction of a certain number of peritoneal cells and white corpuscles, and thus brings about coagulation, which assists the mechanical pressure in the arrest of hemorrhage. It may also be harmlessly pushed in various directions in the abdominal cavity. It is non-irritating, and as drainage becomes less or hemorrhage is controlled, it may be gradually removed, the strips of gauze first, one by one, and finally the bag.

In conclusion, from the study of the above cases, as well as several others which I have seen during my service in the hospital, I would say I consider the chief danger in its use to be the pressure effects upon the nervous mechanism of the intestines, thus producing adynamic obstruction, as in one case presented, and in a second case which I have observed in which this was the probable cause of death, or other intestinal complication, as has been observed in several cases. The secondary shock which to a greater or less extent always attends the removal is another objectionable feature, but when we consider the few indications for its use, mostly in desperate cases, where nothing will take its place, these chances must be taken, and should hardly be considered in comparison to its advantages in cases where it is indicated.

R. H. IRISH.

Editorials.

The Bulletin of Medical Legislation.

In its January number the ANNALS stated that it would publish a table of the bills pertaining to public medicine introduced during the session of the Legislature. It has accomplished the work to its own satisfaction and to that of its readers, though it required considerable labor to keep track of and to properly tabulate the numerous measures. It was an innovation in medical literature, and it is now too early to predict the general opinion of the medical world. Those interested in public medical matters have been enthusiastic, and expressed satisfaction in having such a table to refer to. For the purposes of reference during the year the tables will undoubtedly be found valuable; if such proves to be the case, they will be continued during the next session. The Committee on Legislation of the State Medical Society, and some of the county societies, have found it a great aid in following medical legislation, and on the whole the ANNALS feels that the labor has been well spent, inasmuch as the tables have been valuable to many and interesting to the majority of its readers.

The Albany Medical College.

The sixty-seventh commencement and the twenty-fifth annual meeting of the Alumni Association were held April 20th, and revealed the satisfactory condition of the institution, both in the character of the work accomplished during the year and in the loyal support of its graduates. After due consideration, the Executive Committee decided to again omit the alumni dinner, and in its place accepted the invitation of the faculty to a reception and collation in the college library after the meeting of the association. This proved in every way an agreeable substitute, and permitted many guests who would have been unable to remain over night for a dinner to participate in the social features of the day.

The elevation of Dr. Tucker to the Presidency of the Association was a fitting recognition of his valuable services as its executive officer during the first quarter century of its existence. It is almost needless to add that in thus honoring him, the Association secures for itself the benefit of his intimate acquaintance with its needs, which will be used to good advantage during his term of office.

The prosperity of the college during this epoch of increased requirements, which it is obliged to meet upon its own resources, and without endowment, is a gratifying indication of approval of its work. Although the law requiring four years' attendance does not apply to candidates matriculating prior to January 1, 1898, the college, true to its traditions, has made the longer course obligatory with the beginning of the session just ended. This permits the more gradual evolution of the new curriculum and the introduction of new subjects of study. Thus, a course of lectures on the history of medicine has been begun by Dr. Stillman; Dr. Hailes has introduced the microscopical projection apparatus for purposes of illustration in histology and embryology; Dr. Robinson has completed the equipment for the demonstrations in electricity, among the acquisitions being an X-ray machine; and pathology and bacteriology have developed with the organization of the Bender Laboratory, under the direction of Dr. Blumer and his efficient assistant, Dr. Lartigau. The practical clinical courses have become prominent during the last five years. It is to be hoped that this practical work, which is proving a fitting substitute for the bedside instruction so important in the old system of preceptorship, may not succumb to the pressure for book knowledge preparatory to the State examinations for license to practice.

Scientific Review.

The Theory and Rational Treatment of Asthma. — Sihle discusses this topic in the *St. Pet. Med. Woch., Nos. 44 and 45, 1897,* first reviewing the literature of the subject.

Biermer and Trousseau first wrote upon the pathology of asthma, and attributed the attacks to spasm of the small circular bronchial muscles. They explained the attacks as due to irritation of the branches of the vagus, and regarded the disease as a "vagus neurosis." The cause of the irritation was next found in the discovery of Curschmann's spirals, and Leyden explained the asthmatic attacks as reflex from the irritation provoked by the crystals. Other writers then found the same reflex conditions to follow other foci of irritation, especially catarrhal conditions of the nasal mucous membrane. More recently Brügelmann has made a great advance in the study of asthma by the insistence that in this disease we have to do with an exquisitely developed nervous condition, in which the central nervous organs play the principal part. Sihle regards the disease as without doubt due to a tonic spasm of the bronchial musculature. Reviewing the varieties of cases presenting themselves, he finds that this spasm may originate in several different ways; first, the irritation arises from the peripheral nervous system; second, from the circulatory current; third, from the cerebral hemispheres.

1. In the first class the irritation exists most generally in the mucous membranes of the air passages, and especially in the nose, the posterior nares, naso-pharynx and the bronchi. Other terminal nerve filaments may be involved, however, so as to set in activity the centres controlling the asthmatic spasm. Gradenigo has, *e. g.*, seen asthma following irritation of certain parts of the ear. Further, certain mucous membrane changes in the uterus may exert the same influence upon the nervous system, and produce an asthmatic attack. And it must not be overlooked that under certain conditions diseases of other organs may produce a like result. Brügelmann places all these later-named forms under the head of neurasthenic asthma, but Sihle does not think this assumption is yet justified.

2. Asthma follows excess of carbon dioxide in the blood. The intoxication may arise from acute constriction of the air passages or from excessive muscular exertion, as from mountain climbing or walking. The excessive carbon dioxide irritates the brain, and at the same time, in asthmatic subjects, exercises a direct irritation upon the cerebral centres controlling the bronchial musculature.

3. The irritation of the centres for the asthmatic spasm arises in the brain, and is a psycho-pathological cerebral condition, just as hysteria, neurasthenia or emotional states. All these conditions have the possibility of exciting to abnormal action the weakened cerebral centre for the bronchial musculature. In

illustration Sihle refers to a case in his practice of a patient who suffered from periodical attacks of melancholia. Simultaneously with the attacks of melancholia asthmatic seizures invariably occurred and diminished when the melancholic phase began to subside.

In regard to hysteria there is a special phase which calls for observation. An hysterical patient may present all the features of an attack of asthma without having an attack of real asthma — that is, without any affection of the cerebral centre for the bronchial musculature.

From the foregoing Sihle makes the following schematic classification of asthma:

I. *Neurogenous Asthma.* —
 A. The irritation originating in the mucous membrane of the air passages:
  1. Nasal
  2. Pharyngo-laryngeal } Asthma.
  3. Bronchial
 B. The irritation arises from other peripheral nerve areas.
II. *Hæmatogenous or Intoxication Asthma.* —
 A. Through narrowing of the air passages.
 B. Asthma after mountain climbing, walking, etc.
III. *Psychogenous Asthma.* —
 A. In hysteria.
 B. In neurasthenia.
 C. In emotional states.

The author's special object is the discussion of the treatment. It is necessary to recognize that only few cases are clearly of one of the described forms, and that by far the greatest number are mixed cases, and it is of the greatest importance that consideration should be given to the mental features of the disease. He reviews the accepted methods of treatment, allowing for each its proper place, but insists upon the need of associated mental treatment. The psychotherapy is of three kinds: systematic instruction of the patient, suggestion and hypnotic suggestion. During the application of all these measures the eventual successful outcome must be emphasized, and the patient must be instructed that practice and the exercise of the will is a necessary feature of the treatment. His general reasoning is that the centre of the bronchial musculature is the affected spot, and that from here the trouble may readily spread to other areas. The details of the psychic treatment are with difficulty described. He prefers hypnotic suggestion, and his general method is as follows: Every asthmatic is first placed under a purely mental treatment, and in the course of the first week it becomes apparent whether the disease is purely mental or not in origin. It will then become apparent whether it is necessary to use some of the customary lines of treatment, as the galvano-cautery, the pneumatic apparatus or any other kind of local treatment. Toning the body generally, hydrotherapy, especially the systematic rubbing of the whole body every morning, are of great value. About three months are necessary for the treatment. Relapses not infrequently occur, but are of less intensity than the original attack, and usually respond quickly to treatment. The author does not believe that climatic treatment is essential. If the asthma be complicated, as with pulmonary emphysema, or heart weakness, or a tendency to œdema, the prognosis must of course be more guarded. The result is very doubtful when angina pectoris is also present.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D.

Public Medicine in the Recent New York Legislature.— During the session of 1898, which included 58 working days, 139 bills pertaining to public medicine were introduced; 30 passed both houses and went to the Governor; 21 passed one house; 72 died in committee, and 16 died on the calendar. The majority of these bills were amendments of the public health and agricultural laws. No important general laws were passed, and most of the bills now in the Governor's hands are of a local nature. Of the 139 bills introduced, 67 had a general application, and the few of this number that passed do not effect any radical change in the existing medical laws of the State.

There were, however, a number of bills of considerable interest and significance which failed to pass, many of which will come up again next year, in the same or in modified form.

The Dispensary bill, vetoed last year by the Governor, passed the Senate by a vote of forty to two, but was pigeon-holed in the Assembly Committee on Public Health, notwithstanding the strong efforts of its adherents to get it out. It undoubtedly would have passed the Assembly had it been reported. The first attempt in New York State to reform the medical expert system was incorporated in a bill coming from the State Homeopathic Medical Society; but it was not heard of after reaching the committee. The first attempt to legalize osteopathy in this State was likewise buried in committee. The medical press attacked it almost before it saw light. The Montgomery County Midwifery bill passed both houses. It had several hearings, and the opponents of the measure held that local laws of the character were objectionable, and stated that next year a general bill would be introduced controlling the practice of midwifery throughout the State. The lively discussion over the bill indicated that a general measure would precipitate a pretty fight, even though there was urgent need of the general control of midwives. The several bills designed to place barber shops under sanitary control were lost in committee. The "short-hour drug clerk bill," applying to Greater New York, after numerous hearings, and in the face of strong opposition, passed both houses. The Senate resolution concerning the State Colony for Consumptives died in the Finance Committee. It could not be called great liberality on the part of the coming Legislature to pass this resolution, which appropriates but $1,000 to ascertain whether it is possible or wise to establish such a colony. Craig Colony received $158,000; Dannemora State Hospital for Insane Convicts $77,252.

It is readily seen that although a large number of bills were introduced, very little was accomplished in the way of reform or improvement. This is accounted for in the main by the fact that the medical world gave little attention to the bills, and the members of the Legislature, not understanding them, took little interest and let them die.

State Medical Examinations.— The section on medical examinations in the last report of the examination department of the University of the State of New York, issued in December, 1897, should be of considerable interest to the profession, because of the enormous uplift which this institution has given the educational standard of the profession within the State during its short influence of seven years. The standard reached within that time places New York on a par with or above every other State in the Union. To use the words in the report: "The clause in the law permitting the indorsement of licenses from other State examining boards is still inoperative, as no other State board meets in all respects the New York requirements. Pennsylvania, New Jersey, New Hampshire and Missouri have more nearly approximated this standard than any other States, but in no other State are the preliminary requirements on quite the same plane as those exacted by the New York statute. Again, though other States may claim a higher standard for the medical examination, an analysis of the comparative results seems to indicate that this claim is without foundation."

Again, it may be gratifying to many to know that the next previous report says: "The minimum standard for the degree of M. D. is equal to that prescribed in Austro-Hungary, France and Germany."

The tremendous energy necessary to bring about such an advance in so short a time should only be equalled by the zeal of the students to maintain the high standard of worth in the educational world which it gives them.

A brief analysis of the results of the licensing examinations for the year shows that 24.8% of the old school, 17.7% of the homeopathic and 23% of the eclectic candidates were rejected; that during the six years of the work of the department, out of a total of 3,103 candidates examined 704, or 22.68%, were rejected. Subsequently 15% passed, leaving about 12% of the formal applicants who still stand rejected, not taking into account a large number of informal applications for license from persons unable to meet the requirements either for admission to the examinations or for the indorsement of their credentials. Considering such applications, the number of applicants that have not succeeded in their efforts to secure authority to practice medicine in New York would be at least 30%.

For the year, among the New York schools, the Women's

Medical College, New York Infirmary, New York College and Hospital for Women, and the New York Homeopathic Medical College head the list, each with 100% accepted.

The advance of the standards in New York and other States is not devoid of a certain degree of unnecessary restriction and injustice, both of which can be easily remedied by a "National Confederation of Examining Boards." This matter was treated in detail in the September, '97, ANNALS. Make the standards in all States equal — that is the cry, and the next step in line of substantial advancement.

A Bill to Extend the Power of the Marine Hospital Service. — Senator Caffery has recently presented a bill in Congress "to amend the act of 1893 granting additional quarantine powers to the Marine Hospital Service, and imposing additional duties upon that service." The bill was referred to the Senate Committee on Public Health and National Quarantine. It is evidently the outcome of the last annual report of the Secretary of the Treasury, for its clauses cover all the suggestions and recommendations embodied in his report. Furthermore, it is a natural movement following the recent disastrous experiences of the country with yellow fever — to enlarge and give greater power and scope to a governmental department which did excellent service during the epidemic, but found its hands bound by State laws and ties of various kinds.

The salient provisions of the bill are as follows:

That "an act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service, approved February fifteenth, eighteen hundred and ninety-three, be amended as follows:" (The amendment to section one is not important.)

That section three read as follows: "That immediately after the passage of this act the Secretary of the Treasury shall make such rules and regulations as are necessary to prevent the introduction into the United States of any infectious or contagious disease from any foreign port or place, or the spread of such disease from one domestic port to another. All rules and regulations shall operate uniformly, and shall not discriminate against any port or place." (Here follow voluminous rules for the control of quarantine stations and pertaining to international quarantine, the detail of which is unnecessary.)

" The Secretary of the Treasury shall, whenever in his judgment it is necessary, make rules and regulations to prevent the introduction of infectious or contagious diseases into one State or Territory, or the District of Columbia, from another State, Territory, or the District of Columbia, and when such rules and regulations have been made they shall be promulgated by the Secretary of the Treasury and enforced by the sanitary authorities of the States and municipalities when the State or municipal authorities will undertake to execute or enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations, or other rules or regulations made under the provisions of this act, the President shall execute and enforce the same, and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

" Whenever yellow fever, cholera, plague, or typhus fever has passed the quarantines of the United States, or in any manner any one of these diseases has gained entrance or has appeared within the limits of any State, Territory, or the District of Columbia, the quarantine regulations of the United States, prepared under the direction of the Secretary of the Treasury, shall be supreme and have precedence of State or municipal quarantine laws, rules, or regulations, and the President is authorized to enforce the same within the limits of any State, Territory, or the District of Columbia, and to control the movement of vessels, railway trains, vehicles, or persons within any State, Territory, or the District of Columbia, to prevent these diseases from spreading from one State, Territory, or the District of Columbia, to another State, Territory, or the District of Columbia, and to prevent unnecessary restrictions upon interstate commerce."

The amendment to section six refers to the examination and holding of infected vessels by National, State or local quarantine until a certificate can be given by the health authority in charge that the vessel, cargo and passengers are free from infectious disease or danger of conveying the same.

The amendment to section eight provides that the United States shall properly remunerate the State or municipality whose disinfecting plant it uses.

For all practical purposes this bill is the same as that proposed by the American Public Health Association and the journal of the American Medical Association. Both bills furnish methods toward a common end, but the wide difference in the methods is going to furnish, we fear, the point where progress will be checked, for it precipitates a controversy. The members of these representative associations, the Treasury Department and the people at large see the necessity of the national control of our public health institutions, but it seems that the usual amount of quibbling and diversity of opinion as to the proper method is necessary to bring about the desired result. A free discussion, with all factional feeling eliminated, would be welcome and advantageous.

The Caffery bill gives an established governmental institution the necessary additional power to bring about the required result, so the Secretary of the Treasury and the Marine Hospital Service think. On the other hand, the Public Health Association looks to more radical means, the creation of a Public Health Board, consisting of a health commissioner, as head, and an advisory and deliberative council of forty-five members, and obliterating or including under its control the Marine Hospital Corps.

Whichever course is taken, we hope that no mistakes will be made. The health and protection of the country cannot be improved by the enactment of a law which, three or five years from now, is found to be a failure.

Medical News.

ALBANY HOSPITAL. — The annual appeal of the Hospital to the citizens of Albany has recently been issued for the year ending March 1, 1898:

" The significant and gratifying fact in the Hospital year is the realization, now assured, of the project for new Hospital buildings. On the 11th April next the Hospital will enter on the forty-ninth year of its history. When the last year of its half century shall have been reached, it will hail its advent, *D. V.*, in the shelter of a new home, on another and most advantageous site, and in possession of facilities for its charitable work entirely abreast with the times. And so will resume its place in the very first rank among institutions of its kind, and again keep step with the march of medical science in the progressive age in which we are living. And we and the city of which we are citizens must share in the congratulations which will be due to such an event. For whether viewed as an indication of humane public spirit, or of business enterprise, its public Hospital is a notable feature in a city's life. Few things characterize it more distinctively. For the renown of the city, therefore, as well as for the sake of humanity, our Hospital shall re-establish itself in a new career of usefulness.

" Let it rise in attractiveness of design and in usefulness of structural detail. Let it testify as a whole, and in its various parts, to the general and particular benefactions of those who have made this re-establishment possible. In its foundations and superstructures, in its pavilions and wards, may it memorialize not only the gifts of the living, but the lives of those who have given reputation and character to our past. And may each gift be the earnest of a newly awakened and permanent interest in its continued prosperity, and the guaranty, as it needs must be, of that annual provision for its support without which the buildings and opportunities which they afford will fail in their purpose just in proportion as that help is withheld. We are entering on a year in which our expenditures must of necessity be much increased by the contemplated change. We urge that this may be taken into account, and especially that no gift to the building fund may be at the expense of this annual and now much-needed contribution."

The number of patients cared for in the Hospital from March 1, 1897, to March 1, 1898, is shown in the following table:

In Hospital, March 1, 1897	94
Admitted during the year	1,201
Total number treated	1,295
Discharged recovered	784
Discharged improved	270
Discharged unimproved	81
Died	78
In Hospital, March 1, 1898	82
	1,295

Daily average number of patients for the year	83 243/365
Number of days' treatment of patients	30,538
Number of weeks' treatment of patients	4,362 4/7
Number of days of charity work for which the city pays at the rate of $4 per week	11,375
Number of days of charity work for which no remuneration was received	1,572

OUT-DOOR DEPARTMENT.

Number of treatments received by patients from March 1, 1897, to March 1, 1898....	Males....	6,411	
	Females..	7,020	13,431
Number of prescriptions made up and given away to needy patients			8,397

The endowment fund is $76,650. This fund has been increased this year by legacy, Ann Eliza Tweddle, $2,000.

THE ALBANY COUNTY MEDICAL SOCIETY. — A regular meeting was held Wednesday evening, April 13, 1898, the president, Dr. J. V. Hennessy, in the chair. Dr. W. J. Wansboro presented a paper on "Erysipelas Neonatorum Complicated by Acute Peritonitis, with Report of the Case." Dr. Wansboro's paper was discussed by Drs. Blumer, Ward and Wiltse. Dr. Harry S. Pearse presented a paper on "State Medicine." Dr. Pearse's paper was discussed by Drs. Mosher and Ward. Upon motion of Dr. Skillicorn the thanks of the Society were extended to Drs. Wansboro and Pearse for their interesting papers. The applications for membership of Drs. C. Harper Richardson and H. Judson Lipes were presented and referred to the censors.

THE SPITTING NUISANCE. — At a recent meeting of the Albany Board of Health, the Health Officer was directed to notify the officials of the Albany Railway that signs must be placed in each car forbidding expectoration therein.

Book Reviews.

A Text-Book on Surgery, General, Operative and Mechanical. By JOHN A. WYETH, M. D., Professor of Surgery in and President of the Faculty of the New York Polyclinic Medical School and Hospital. Third Edition, revised and enlarged. New York: D. Appleton & Co. Pages, 997.

Although the last few years have seen the publication of several most excellent systems on surgery by American authors, the appearance of the third edition of this work indicates that there is a continuous demand for a one-volume work, which should include the essentials of surgical practice rather than lengthy dissertations upon the theories of surgery, and which should condense the subject-matter by the omission of what was not absolutely necessary.

The first edition appeared in 1886, and it is eight years since the second edition was published. So much progress in surgical technique and operative procedure has been made during this period that the present edition has practically been rewritten.

The first six chapters are given to surgical pathology, including simple and infectious inflammations and the processes of repair. In this section he recommends Janet's method of treatment of urethritis by large irrigations of permanganate of potash. In tetanus he endorses Hewlett's advice, that the antitoxine should be employed prophylactically where the infection is highly probable, as the system is so highly saturated with the poison when the symptoms appear that the antitoxine is usually of no avail. He wisely admits that the classical symptoms of the initial lesion of syphilis are so often absent that they cannot be relied upon for diagnosis. He recommends the proto-iodide for six months, then alternations of it with potassium iodide. In diphtheria he endorses the use of antitoxine, but makes no mention of tracheotomy as a surgical procedure necessary in some cases. In chapters seven and eight surgical dressings, sterilization and anæsthesia are considered. No mention is made of the use of formaldehyde, and alcohol is said not to be reliable under any circumstances as an antiseptic (?). Anæsthesia by cocaine, including Schleich's method, is very completely described, as we would expect from the author's work upon this subject. His characterization of Hodgkin's disease as leucæmic lymphoma indicates a disregard of the blood condition present, while in the one paragraph descriptive of acromegaly no mention is made of its relation to tumors of the pituitary body. The subject of aneurisms is very fully considered; records of the important operations, with an analysis of their results, are given, and the comparative value of the various operative procedures discussed. The drawings in the chapter on the ligation of vessels are especially handsome, and the methods are clearly and concisely described. Two skiagraphs of fractures of the lower arm illustrate the chapter on fractures. In operations upon tumors of the breast, Halstead's wide incision and technique are strongly endorsed. Almost fifty pages are given to the surgery of the eye, including refraction, ophthalmoscopy and testing for glasses, subjects which might, in such a condensed work as this, better have been entirely omitted.

The work, though in some respects uneven, is a thoroughly practical and useful surgery.

Sanitary Engineering. By WILLIAM PAUL GERHARD, C. E., Consulting Engineer for Sanitary Works, Member of American Public Health Association, American Forestry Association, Corresponding Member of American Institute of Architects. 132 pages. By the Author, 36 Union Square, East, New York, 1898.

Preliminary to a review of this treatise, it may be asserted that the unselfish devotion of the medical profession in recent years, incited by a high sense of duty in formulating and teaching the laws of health, has given to sanitation the character of a science and developed the sanitary expert as a specialist in the department of engineering.

This little publication embraces a lecture delivered by the author before the Franklin Institute of Philadelphia, February 15th, 1895, and an appendix discussing the work of the sanitary engineer in time of epidemics, in time of war and in sudden calamities in civic life.

Evidently, and in brief space, of necessity, it only undertakes to marshal features of possible and desirable sanitary reforms in order to present and emphasize the importance and extensive scope of this new profession which the author applies to a wide field of labor. The discussion of these features naturally trenches upon and enters into the domain of other divisions of constructive science, such as architectural, hydraulic, railroad, marine and the various features of municipal and even military engineering, and aims to exemplify the importance of sanitary provisions in nearly the whole field of engineering work, and the training of experts to apply them. It points out a course of study to become fitted for the specialty, and indicates the various classes of work and the problems arising in the practice of the profession, elaborating those of particular importance, such as the water supply of cities, sewerage, prevention of pollution of water-courses, street pavements, street cleaning, garbage disposal, laying out of towns and cities, drainage, sewer ventilation, sanitation of buildings, railways, coaches and ships, the inspection of buildings and building sites, the sanitary engineer's services as an expert in courts, his general qualifications, and his place in public life and municipal government, and finally the work of the sanitary engineer in times of epidemics, war and sudden calamities.

Its perusal is very instructive, and brings the reader to the conclusion that no one may be entitled to the name "sanitary engineer" unless qualified by study, special training and practical experience to offer sound advice upon all problems arising in his profession — defined as the art and science of applying the forces of nature in the planning and construction of works pertaining to public or individual health; in other words, the promotion of healthful conditions.

The comprehensive range of subdivisions discussed, and the terse assertion of their features, set in motion a line of thought expanding much beyond the few pages devoted to the work. One lays it down with a feeling that he has perused a large volume upon the subject. It should be in the hands of all who are following professions to which the subject is allied, and especially should be possessed by students of the science, and it may be perused with much advantage by municipal officers and private individuals engaged in directing or executing construction works. ARNOLD E. SMITH.

The International Medical Annual and Practitioners' Index. A Work of Reference for Medical Practitioners by thirty-five contributors. Sixteenth year. New York: E. B. Treat & Co., 241–243 West Twenty-third street. Pages, 740. Price, $3.

The sixteenth volume of this most excellent compilation of current medical knowledge maintains the high standard reached by its predecessors. Among the many subjects which are abstracted, those that are of especial interest receive very full consideration. The surgery of the gall bladder is given twelve pages, and Calot's method of forcibly straightening the spine in Pott's disease is fully considered in an article with eleven illustrations. In the chapter on new remedies, considerable space is accorded to the value of the various antitoxines, the organic extracts and also to Koch's new tuberculin, although the complete failure of the last is not mentioned. This volume is enriched by the addition of an atlas of the "Pathogenic Bacteria in Man," with handsome illustrations and full descriptions of the methods of isolating and examining these bacteria. The text is very well illustrated, and the volume is of handy size for frequent use. The death of Theophilus Parvin removes from the staff of co-editors one whose work in the department of obstetrics and gynæcology has been of the highest value. It would have been a gracious act upon the part of the publishers to have fittingly testified to his work by a short memorial article.

Sexual Neurasthenia [*Nervous Exhaustion*]. Its Hygiene, Causes, Symptoms and Treatment. With a Chapter on Diet for the Nervous. By GEORGE M. BEARD, A. M., M. D. Edited, with Notes and Additions, by A. D. ROCKWELL, A. M., M. D. Fifth Edition, with Formulas. New York: E. B. Treat & Co., 1898.

To Dr. Beard belongs the credit of having popularized the term neurasthenia, and of having attracted general attention to the underlying constitutional condition so frequently masked by prominent local manifestations. The philosophy of neurasthenia and the study of its pathology have been elaborated during the generation following his original contribution, but his clinical observations and grouping of cases are fully as valuable to-day as when first published. This is especially true of the mental aspects of the disease. It is an interesting fact, not generally known, that priority in the description of the mental manifestations of neurasthenia should be given Dr. Van Deusen, whose contribution to the subject in the report of the Michigan Asylum for 1866 antedated Dr. Beard's first publication. The importance of the fact has since been shown in connection with the growing appreciation of the direct association neurasthenia bears with insanity. In the genesis of mental disorder the departure from health is initiated by a train of neurasthenic symptoms, and in the absence of sufficient development of the mental symptoms to warrant the strict use of the term insanity, there is, as an integral part of the disease, a constitutional, neurasthenic habit, upon the recognition and description of which the value of Dr. Beard's work depends.

The present volume is too well known to require extended notice. It treats of an important branch of the general subject, and carries many suggestions to physicians who have much to do with the various phases of hypochondriasis. It constantly enforces the need of general treatment, and its usefulness is emphasized by a convenient classification of the disease, with illustrative cases, and the addition of numerous formulæ, which have stood the test of the author's great experience.

Dr. Rockwell's work of revision has been conscientiously done, and everywhere accords with the theory and practice of his late colleague. He describes a method of electrical treatment, " for want of a better name, termed the depolarizing method," which has served him well in many obstinate cases.

In the matter of mechanical execution the publishers have sustained their well-earned reputation.

The Elements of Clinical Diagnosis. By Prof. Dr. G. KLEMPERER, Professor of Medicine at the University of Berlin. First American, from the Seventh (last) German Edition Authorized translation by NATHAN E. BRILL, A. M., M. D., Adjunct Attending Physician, Mount Sinai Hospital, New York City. and SAMUEL M. BRICKNER, A. M., M. D., Assistant Gynæcologist. Mount Sinai Hospital, Out-Patient Department. Pages 292. Price. $1. New York: The Macmillan Company, 1898.

Seven editions in as many years is a commendable record, and needs not the praise of the reviewer. In the original, Klemperer's Diagnosis is well known in America, both because it is a good book and because it is generally used by the many physicians whose study abroad has included the author's diagnostic course. The translation has been successfully accomplished, and will secure for the book a still wider acceptance as one of the standard publications upon its subject.

There are thirteen chapters besides an introductory note on The Method of Diagnostic Examination. Separate chapters are given to Anamnesis and General Condition, the Urine and The Roentgen Rays, the remaining ten chapters being devoted to the diagnosis of disease classified upon the usual basis of convenience. The author follows the German method of discussion of the differential value of each symptom, and in the condensed and concise manner in which the subject is treated leaves little to be desired. He has been fortunate in the editorial cooperation of Prof. Goldscheider in the preparation of the chapter on Nervous Diseases, and in the reproduction from Fränkel and Pfeiffer's Atlas has secured some most excellent micro-photographic illustrations of the varieties of bacteria.

In chapter I the instruction to feel the pulse for a quarter-minute with one finger we fear is not good advice for students, if they hope to attain the skill attributed by the author to the " older physicians, who were masters of observation." In chapter II. upon Acute Febrile and Acute Infectious Diseases, trained nursing is very properly included among the necessary therapeutic measures to be adopted in the temporary period before the differential diagnosis is made. In the chapter on physical signs, following the Continental idea. no distinction is recognized between bronchial and cavernous respiration, the terms being used synonymously. In chapter VIII, upon the Examination of the Urine, are included the tests for some of the newer remedies, as antipyrin, antifebrin, phenacetin and naphthalin. In chapter X is given a review of the Disorders of Metabolism, in which the methods of analysis and computation are thoroughly outlined. For terseness and clearness the chapter on Bright's Disease is notable. The condition is described as "œdema with albuminuria," and the varieties are summarized under the two general classes of inflammatory and non-inflammatory, in each of which there are three stages, although in the non-inflammatory forms the stages exist individually in types which are not related to each other. The chapters upon the Blood and Animal and Vegetable Parasites are especially full, and these are followed by a short chapter upon the uses of the Roentgen Rays and a prophecy as to their further development in the uses of diagnosis. A copious index completes a volume which will be at once recognized as one of the best. Little is to be desired in the way of mechanical excellence. A few typographical errors are found, which may be readily corrected in a revision of the plates.

Outlines of Rural Hygiene. For Physicians, Students and Sanitarians. By HARVEY B. BASHORE, M. D., Inspector for the State Board of Health of Pennsylvania. With an Appendix on *The Normal Distribution of Chlorine*, by Prof. HERBERT E. SMITH, of Yale University. Illustrated with Twenty (20) Engravings. Pages vi–84. The F. A. Davis Co., Philadelphia. New York City, Chicago, Ill.

This is another little book destined to be very useful to the country practitioner, since it gives in a clear manner the principles which should serve as a guide in all questions pertaining to rural hygiene and sanitation. The chapter on Water Supply discusses the various sources whence water is drawn, and suggests precautions to be observed in choosing any particular supply. Under Waste Disposal several good methods suitable for use in isolated dwellings are described. Chapters follow on The Soil, including ground air, ground water, etc.: on Habitations, describing their care and suggestions as to warming and ventilating, and on Disposal of the Dead. To this is added an appendix on "The Normal Distribution of Chlorine," showing that waters naturally contain a variable amount of chlorine, depending upon the locality whence they come, and that their normal chlorine percentage must be considered in determining their value for household purposes. LYMAN A. JONES.

The Care and Feeding of Children. A Catechism for the Use of Mothers and Children's Nurses. By L. EMMET HOLT, M. D., Professor of Diseases of Children in the New York Polyclinic, etc. Second Edition, Revised and Enlarged. New York: D. Appleton & Co., 1897. Pp. 104.

This second revised and enlarged edition of an exceedingly practical little book will unquestionably receive a warm welcome, not only from the mothers and nurses of children, for whom it is especially prepared, but from physicians as well. The question and answer form of writing is well adapted for the setting forth of the information it aims to give. The questions are clearly and concisely put, and the answers so simply yet comprehensively given that their meaning is unmistakable.

That portion of the book devoted to infant feeding, and the preparation of modified cow's milk as a substitute for the mother's milk, founded upon the latest experience, will be found particularly helpful to a proper understanding of this oftentimes troublesome matter.

The book has our most hearty commendation, and it should enjoy a wide circulation. LYMAN A. JONES.

Current Medical Literature.

Some Examinations of the Urine of Soldiers after Severe Marches. — Benedicenti (*Archives Italiennes de Biologie, Sept., 1897*), recently examined the urine of a number of soldiers after fatiguing marches. He sought for: (1) Changes in acidity; (2) Sugar and albumen, and (3) Increase in toxicity. In all the cases there was an increased acidity of the urine due to the increase in urates and free uric acid, and this was most marked after very fatiguing marches. Sugar was never seen, but albumen was observed in two cases. The toxicity of the urine, as tested on dogs, was markedly increased. This increase of toxicity was shown to be due to the presence of a non-dialysable substance, which produced depression of temperature, vomiting, and symptoms of intestinal derangement. G. B.

The Association of an Ovarian Cyst with Marked Bronzing of the Skin. — Skene Keith reported a case to the British Gynæcological Society (*British Gyn. Journal, Nov., 1897*). The patient had been seen years before by Skene Keith's father, who found a small slowly growing ovarian cyst. The reporter saw her about a year ago; she looked ill, suffered from sickness, and had marked bronzing of the skin, suggesting Addison's disease. The bronzing had been noticed for several months. He decided, in view of her bad health, to simply tap the cyst, and about thirty pounds of fluid was removed. All the symptoms subsided and the bronzing became less marked. The cyst refilled and he removed it. In the discussion the president remarked that he had seen several cases in which bronzing was associated with pelvic disease; the bronzing in these cases seemed to be entirely different from the pigmentation usually observed in pregnancy. He thought it was probably due to some sympathetic nerve disturbance.

The Diaphragm Phenomenon — The So-called Litton's Sign. — By Dr. Norman B. Swyn (*Johns Hopkins Hosp. Bulletin, February, 1898*). The movements of the diaphragm apparently escaped detection by the earlier clinicians, although Stokes, in 1837, casually referred to it, but the first careful study of this phenomenon must be ascribed to Litton in 1892. In his paper he asserts that one can see the movements of the diaphragm as a constant physiological appearance. Dr. Swyn largely goes over Litton's own work on this subject and considers his own results of the observation of 100 consecutive cases. In every case not too fat or excessively developed, or who had no serious pulmonary disorders, the sign was found. It was present in ninety-one cases, and the most favorable field of motion for the shadow lay between the parasternal and post-scapular lines. The phenomenon is best studied with the patient in the recumbent position. The diagnostic value of the sign is uncertain owing to the extremely limited number of observations in the different pulmonary affection, etc. A. J. L.

Treatment of Meniere's Disease. — Giles de la Tourette in *Semaine Medicale*, 1897, *Vol. 17, Page 301.* (Abstracted in the *Centralb. für Nervenh. und Psych., 11 Dec., 1897.*) The author first discusses the physiology of the internal ear. The nervus vestibularis is the nerve for "space." It has the function of retaining the center of gravity; lesion of it is attended by disturbance of the center of gravity as well as vertigo for a consequence. The nervus cochlearis is, on the contrary, the special nerve of the sense of hearing. Because the first arises from the cortex of the worm, so does the vestibule stand in direct connection with the cerebellum, the center for the center of gravity, and only indirectly is it in connection with the cerebrum. Menière's disease arises from an increase of pressure of the fluid in the inner ear; thereby both branches of the acousticus are irritated. Vertigo is also to be attributed to an excessive irritability of the nerves of the labyrinth.

The causes are various: plugs of ear wax or a foreign body in the external canal, abscess in the tympanic cavity, sclerosis of the tympanic cavity (following gout or arterio-sclerosis), ankylosis of the ossiculi, atrophy of the stapedius, increase of the tension of the arteries (Bright's disease), arterio-sclerosis of the same, aneurysms, and extravasation of blood into the labyrinth through rupture of the anuerisms or hæmorrhage, in consequence of leukæmia — all these may exert a pressure upon the labyrinth. Also intra-cranial pressure upon the acousticus and its origin may affect the function of the nerve.

The treatment must first of all be directed to a search for the cause, and this entails an examination by a specialist in diseases of the ear. If the treatment adopted by him is followed by no satisfactory result, or there is no local disease discoverable, then the writer recommends first an attempt with Charcot's procedure — the use of sulphate of quinine. He orders generally three-quarters of a gram to a gram to be taken in three or four doses a day. From the second or third day the patient will feel an increase in tinnitus and in the vertigo to an almost unbearable degree. He must be forewarned of this. After eight or ten days the vertigo begins to decrease or has entirely disappeared. Experience has shown that gastric disturbance must be anticipated on the fourteenth day, and at that time a pause must be made. If the symptoms recur, a similar course of treatment must be undertaken again. If the vertigo is due to labyrinthine disease a complete recovery or, at best, a high degree of improvement will follow the use of the quinine. If slight symptoms remain it is recommended to have recourse to the treatment again after a pause of two or three months. And if the patient is apparently recovered he should not pass immediately from observation, but upon the slightest return of the symptoms he should be given quinine.

If the treatment by quinine is not followed by expected results, then it may be assumed that the disease is not labyrinthine in origin, but that the case originates in an epileptic vertigo. The writer speaks very decidedly against the opinion that the quinine produces deafness. When this complication has happened then it has been a natural result of the disease and has not been due to the Charcot's treatment. The quintessence of this method of treatment lies in the fact that the medicament overcomes the excessive irritability of the nerve of the labyrinth. Therefore, it must be of value in these cases.

Practical Therapeutics.

Itrol in Gonorrhea and Venereal Ulcers.— Wesler (*Therapeutische Monatshefte, January, 1898*) treated fifty cases of gonorrhœa with itrol. Most of these cases were acute, with more or less marked secretion of pus. In the beginning a very weak solution of itrol, .025:200, was injected four times daily; then it was gradually increased to .05:200. His conclusions are: 1. Itrol possesses a marked restraining action upon the gonorrhœa; (2) it produces in solution neither irritative symptoms, nor does it increase the inflammation; (3) it has a deep energetic action, but without injury upon the mucous membrane. In forty cases of venereal ulcers it quickly induced antisepsis and cessation of the destructive action, and transformed the chancroids into clean, kindly ulcerations, without destruction of the healthy tissue. The treatment is absolutely free from odor and irritation, and with slight pain. It also gives hope of preventing the development of the suppurating buboes.

Alpha Naphthol. — Maximowitsch has found that alpha naphthol is three times less toxic and three times more antiseptic than beta naphthol, and advises its use in preference to the latter. When employed for intestinal antisepsis, he administers it with castor oil, thus inducing an evacuant and antiseptic action upon the intestinal tract. If antisepsis alone is desired, the following prescription is useful:

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Alpha Naphthol	3.
Chloroform.	.10
Essen. menth. piper.	.10
Ol. ricini	100.

M. Sig. — One or two tablespoonfuls for persons above ten years of age, and teaspoonful doses for children from three to ten years.

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Original Communications.

MEDICAL EXPERT TESTIMONY.*

BY J. B. RANSOM, M. D.,
Physician to Clinton Prison, Dannemora, N. Y.

If I could offer no other apology for presenting for your consideration, once more, this much-discussed question of medical expert testimony, I should have it in the recent decision handed down from the Supreme Court of the State of Illinois in the Dixon case, where it is affirmed that a medical expert witness is obliged to testify, the same as any other witness, for the same fees.†

Such a decision by a learned judge, in so progressive a State that we have not the right to the keeping of our own self-acquired and held opinions, is more than a mere novelty in experience; it is a danger signal, and should arouse even the most indifferent member of our profession to a keen sense of the danger which lurks in this very decision to our status as a profession. Neither is this view of the way by which medical expert testimony may be obtained restricted to the courts of the State of Illinois, for the writer has three times contested this very point in the Supreme Court of this State, once in a trial for murder and twice in suits for damage resting upon injury. In these cases answer was refused hypothetical questions, or those necessitating the expression of an opinion, because subpœnaed as a witness to facts.

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* Read before the New York State Medical Society, January 25, 1898.

† These are the words of Attorney-General Aiken as stated in a letter to me.

Counsel argued the point. In two cases the court was inclined to sustain the questions, but on further discussion ruled them out; in the third case the court sustained the objection at once, and I doubt not there are many medical men here who have had a similar experience in the courts.

This question of medical expert testimony has come to be taken too much for granted, and as a ground for carpists and alarmists; it has sounded in our ears so long and so often that we have come to look upon it as we do upon any other of the standing unsettled questions of the day — to be talked of, to be admitted as all wrong, and nothing to be done about it. To speak of medical expert testimony is not to interest, is not to enkindle enthusiasm, and there is little wonder at it. Although for nearly half a century this question has been before the profession, nothing has really been accomplished in the way of legislation, the so-called New York, Illinois and Minnesota bills all failing to become laws, and yet I am not exceeding the limit when I state that it is one of, if not the most important question that can possibly claim the attention of our profession to-day, for it is to this unfortunate fact of our relation to the public, in the matter of medical men appearing in the courts, that are due in a large degree just such decisions as that of the Illinois courts.

Indirectly, through the same cause, it seems not unlikely that with the votaries of the law we shall come to be classed as mere tradesmen, as is already the case with the profession in England under a recent decision.

Individually we may say, What have I to do with this question? but every medical man has to do with it, for by the status of his profession must he stand or fall. These are days of rapid progress, and tremendous changes in public sentiment and opinion take place rapidly; deep inroads have already been made upon our professional hold upon the community, in many ways too familiar to require mentioning here; it is only in the light of the mighty progress of our profession, beyond and above all other professions, that we are able to sustain ourselves; but notwithstanding this progress, it must be evident to all observers that the trustful and deep-seated confidence that attached itself to the saddle-bags and lancets of the fathers in medicine, who bled, nauseated and purged in undisturbed confidence, has given place to a spirit of severe criticism, and more or less incredulity. We must therefore grapple with this question so important to our well-being.

It is gratifying to note that this question of medical expert testimony is rapidly coming to the fore, and in spite of the inertia which has existed with reference to its real importance is now the field of discussion for a large number of able writers in our own profession, as well as of lawyers and jurists, and in many States efforts are being made to solve this difficult problem. In our own State the Medico-Legal Society has done a great deal of work in this direction, and are desirous of co-operating with us in committee, and have extended many courtesies; the Homœopathic Society has also in process a measure, on which they have kindly invited your committee to confer, and a general desire on the part of all committees representing different societies to confer. There is also a general committee extant, made up from representatives of the Medico-Legal, Homœopathic and Eclectic Societies and the New York Bar Association, who, I understand, are about ready to report a measure for enactment.

As you are aware, our own society three years ago appointed a special committee to formulate a bill looking to improvement in the methods of obtaining medical expert testimony. A bill was drafted, ordered to the committee on legislation, introduced in the Legislature, went to the Judiciary Committee, and was not reported out, because of a claimed unconstitutional feature, as reported to you by your Committee on Legislation last year. Since that time your committee, in co-operation with the Committee on Legislation, have done a great deal of work in gathering information and opinions relative to how the problem can be solved.

The general consensus of opinion, as the result of all the agitation and discussion of this subject, is that experts should be appointed by the trial court or presiding judge, and for each case as it may come to trial. Standing commissions of experts do not seem to meet with general approval; it is also almost as well established that there should be some standard of qualification. The bill mentioned above was defective: first, in that it did not define an expert, by establishing a standard of qualification; second, that it failed to specify as to how the report should be made to the jury or court; third, the unconstitutional feature of restriction in cross-examining.*

Such a measure should provide for the appointment in all trials requiring medical expert opinion of the medical expert by the presiding judge, who shall appoint such expert witnesses, not exceeding three in number in each case, to pass upon all hypothetical questions. Said experts shall have access to all evidence and to the person of the defendant, in the presence of all the experts, when it shall concern his mental or physical state as well as have power to examine medical witnesses as to their knowledge of the facts, and also to hear expressions of their opinions relative to the significance of observed facts when willingly given. It should also be provided that the judge may hear proposals from counsel as to the appointment of experts in any given case. The expert or experts shall submit to the court, for transmission to the jury, a report in writing, attested by their oath, setting forth their conclusions, together with the facts upon which they are based. The report shall be signed by all the experts taking part in the examination, provided they agree upon the essential points at issue; if not, a dissenting report or reports may be made by individual experts, the same as opinions are handed down from the appellate courts. In case of a disagreement as to the essential points, the judge should have power to dismiss the report, together with the experts making such report, and appoint other experts should he deem it advisable. If counsel demand it, these experts may be sworn as witnesses and cross-examined in such manner as the presiding judge may deem pertinent and necessary to the case, the same as other experts.

The experts so appointed shall be persons of repute holding a certificate of qualification as hereinafter described, in the particular branch of medical science to which the question calling for expert opinion relates. Compensation for such service shall be fixed by order of the court, at a rate which shall be reasonable for professional services of such a nature, and paid in the same manner as other court expenses.

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* The Illinois Bill is similar to the New York Bill, and the Minnesota Bill essentially differs, in that it places no restriction upon cross-examination.

The above-named certificate of qualification is to be issued by the Board of Regents, and filed in the county clerk's office, in the county in which the holder of such certificate is a resident, such certificate to be obtained in the following named manner:

The applicant for a certificate of expert qualification shall furnish reliable evidence to the State Board of Medical Examiners that he is legally qualified to practice in the State of New York, and is of good standing in the medical profession; that he has had not less than five years' experience in the practice of the special branch in which he desires to qualify as an expert. On the passing of such examination to the satisfaction of said board there shall be issued to him, in the same manner as a license to practice is now issued, a certificate of qualification to give expert testimony in the particular branch or branches therein specified, and when properly filed, any physician holding such certificate shall be eligible for appointment by the courts, or may be called by the defense as an expert witness. The testimony of any medical witness, called by either plaintiff or defendant, not holding such certificate shall be restricted to evidence of fact.

I have expressly left to the last of the specifications of the proposed bill the qualifications required, that it might be amply discussed, and the views of those present heard upon this feature. It is only by setting up a standard of qualification that anything like a systematic and satisfactory definition of the expert witness can be made, and it is only through this means that the profession and the courts can be protected from a species of so-called expert testimony which we are so strenuously endeavoring to eliminate. Further than this, should all other features of this proposed measure be declared unconstitutional, this one of qualification will stand, for certainly there can be no constitutional objection taken to the qualification of experts more than to the qualification of the medical practitioner, as he is now licensed. This in itself would be a long step in advance. It has been urged that few physicians would qualify, but this would seem untenable in the face of the fact that the qualification could be made such as not to be too rigidly discriminating. A classification of expert branches should be made and a standard of requirements set up by this society, and also by the Homœopathic and Eclectic Societies.

If judges were always unbiased, were always unmoved by the appeals of partisans and friends, if they could always be relied upon as good judges of the particular qualification of a scientific man, then these requirements of qualification might be dispensed with; but as it is, we know that judges are human and fallible, and that the medical profession, or the courts, cannot afford to rest decisions upon anything less than qualified opinions.

A bill meeting the above enumerated requirements in some degree would seem to be as satisfactory as could be formulated at this time. It must not be expected that any measure can be framed that will in every particular be perfect and not open to some objection; it is nearly, if not quite, impossible to frame any measure which will not come in collision with some trifling rule of procedure, but if we are to stop for that no progress will ever be made in this direction.

We must adopt the practice of the courts in other matters, and get approximately as near to the perfect standard as circumstances will permit; the entering wedge we must have, and a half loaf is better than none. One great trouble seems to be that a change is expected without making any changes; some things must be left to work themselves out. In the framing of so difficult a measure it should be remembered that " expert testimony has really no part in the trial by jury " — " the expert witness is not called to tell what he knows, but what he thinks " (Mather). His function is to pass upon the significance of certain proven facts, and in this respect he is entirely unlike the ordinary witness; therefore his true function is that of an adviser or instructor to the court, and this was the original function of the expert, and for this purpose came he to be a figure in the English courts. He should not therefore be considered as an ordinary witness, but should constitute a part of the court.

It is claimed that appointment of experts by the court does not protect the defendant, but there seems no more reason in saying that both the prosecution and defense should be provided for in the calling of the expert witness than in that both plaintiff and defendant should each be provided with a judge. It should also be remembered that these expert witnesses as appointed are no longer partisan, but are judicial in function, and are for the purpose of seeing justice done to all parties concerned. The great burden of opposition to these measures arises, or seems to arise, from the fear that the defense in a criminal trial shall not have the privilege of calling to his aid the whole population, it may be, as experts to testify in his behalf. The expert witness knows nothing necessarily of fact in the case, and his evidence therefore was not provided for in the early system of common law. It would seem that either side of the case at issue would be more likely to receive exact justice from a non-partisan disinterested board of experts than from a haphazard, promiscuously chosen one of experts of doubtful qualifications, paid by their respective sides. It would seem no more a violation of the constitutional rights of the defense for a judge to appoint his experts than is the action of the judge in deciding the rules of the admissibility of evidence. If the court has a right to determine what is pertinent to the case under the Constituton, he clearly has a right to determine a correct interpretation of the facts by a competent body able to pass upon such facts, and there always remains the right of appeal, and there is nothing in this measure to prevent other licensed experts being called by the defense.

In formulating any measure which will most nearly meet the requirements in the direction of the best methods of obtaining medical expert testimony, there are three essential things to be considered: First, the protection of the State or people; second, the accused; third, the profession. In the suggested measure the first is met by the appointment of all experts by the courts. In the second the accused finds his protection in the justice and fairness of an impartial board of experts, to pass upon any and all questions of a hypothetical nature, evolved from proven facts; and thirdly, the profession finds its protection in the qualification of the expert appointed.

A great deal of the trouble in the formulating of any satisfactory measure lies at the door of the law, and it is not altogether with either the legal or medical professions. Before any satisfactory working measure of procedure can be put in operation there must be a modification of the laws, and to obtain this there must be co-operation of both the professions of medicine and law. Neither profession alone can easily accomplish the desired result; there must be united effort.

There is especially an important feature in the matter of evidence to be determined, and which to properly settle would probably require a change in the rules governing the admissibility of evidence, and that is the admission of a very important form of so-called expert testimony, which is the expression of an opinion based upon personally observed facts, such evidence, however, not being expert evidence proper. With reference to constitutional right of the defense to calling expert witnesses, other than those appointed by the court, I do not think we need to consider, for so long as a standard of qualification is set up there can be little feared from a qualified expert in opposition to the regularly appointed expert by the court. He would stand in an unenviable position, and no doubt after a short time the practice of calling such experts would give place to depending upon the experts appointed by the courts, as I believe the superior opinions rendered would in time come to inspire confidence, and a sole reliance upon their reports to the court.

Not only should we unite in a determined effort in the work of placing the giving of medical expert testimony upon a basis that will no longer make the appearance in court of the medical expert witness a signal for newspaper ridicule, and disparaging comment upon the part of the general public, but we should demand of the legal profession certain concessions, certain modifications of the rules of the admissibility of evidence in criminal procedure, that the expert witness may have that protection which rightly belongs to the dignity of his position in the properly conducted criminal trial. We as a profession should contest the point of being represented in the courts by incompetent and unrepresentative men. We should contest the point that we are forced to give our opinions as evidence without compensation; we should contest the asking of misleading hypothetical questions as now propounded, and the answering of categorical questions intended to entrap the witness. As a society we should be found in the fore in this work of bringing about these desirable ends. Surely a society which has always stood as a sponsor for so much that has meant progress in medical legislation, a society so rich in the heritage of accumulated accomplishments, of high attainments and exact methods of scientific thought and work, cannot afford to be outstripped by other societies in a reform of which it is essentially the parent. Not only should this society appoint a committee to confer with other societies and representatives of the law, but it should provide means by which legal advice could be paid for, and all the expenses arising from a legitimate effort to formulate a measure which will pass all legal scrutiny and become a law. Not only should they stand back of their committees, but exact of them some tangible result in the way of legislation.

The society, in the light of the position it has taken in this matter, can rest at nothing short of some such law as indicated spread upon the statute books of this State. We as a society have theorized and experimented long enough; it is time to act, and action means the securing of this much desired reform. I therefore move you, Mr. President, that a committee of five be appointed by the chair, authorized to confer with all representative medical and legal bodies, and authorized to shape a measure representing the views of this society, in the matter of obtaining medical expert testimony, for introduction to the Legislature.

NOTE.—In the preparation of this paper I am indebted to my fellow-committeemen, and especially Dr. Carlos F. MacDonald, Dr. A. W. Suiter and Mr. R. Mather, for valuable matter and suggestions from their writings on this subject.

EAR MANIFESTATIONS IN GENERAL DISEASES.*

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It is the purpose of this paper briefly to call attention to various ear symptoms more or less frequently observed in the general run of medical and surgical practice, and, if possible, to arouse discussion, especially from the general practice standpoint, and to awaken interest in a special organ which seems to receive neither the study nor treatment which its important demands.

There are but few diseased conditions or pathological changes in the ear, but that may be traced to causes outside of its own domain.

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*Read before the Medical Society of the State of New York at its Ninety-second Annual Meeting, January, 1898.

So that in the study of many diseases, especially those of the nose and throat, the brain and nervous system, the exanthemata, in fact in any disease leading to debilitated physical conditions, the ear cannot be eliminated. Such study, especially so far as it pertains to child life, in order to reach the highest benefit, commands the combined interest of the aurist and the general practitioner.

In bringing to your attention some of the more uncommon ear complications in general diseases a single history representing a type will be related, but no special histories of the commoner ones, such as are seen almost daily in every practice, will be given.

Case I. Malarial Otalgia. — S. L., female, aged 20. Came under treatment September 21, 1897, complaining of severe intermittent pain in right ear. General condition fairly good, and patient is well nourished, but of nervous temperament. Pain had continued for two weeks, and she described it as "shooting up into the side of the head." She had a roaring tinnitus. Hearing distance in right $\frac{24}{30}$, left $\frac{30}{30}$. Examination of the membrana tympani revealed no retraction, congestion or inflammation. In fact, it was quite normal in appearance. One year ago she had malaria, and at that time had some pain in same ear. She had been having chills during the present attack, but could not be sure that they came on with any regularity. Tongue coated and feels drowsy, but the most marked symptom was the pain in the ear, and for this only had she sought treatment.

She recovered fully by the use of the usual remedies for malaria, and with no ear treatment.

This case represents a type that, while not common, is seen with sufficient frequency to require attention, and to make the diagnosis properly necessitates a careful examination of the tympanic membrane.

Case II. Otalgia; Second Stage Syphilis. — D. A., female, aged 28, was referred by her family physician. For five weeks she had suffered from headache of an intermittent character, with rigors, fever and symptoms of a malarial character. During the past two days the pain had been very severe in the left ear, and patient has felt so ill that she remained in bed. Her tonsils were considerably swollen and painful, and suspicious looking ulcerative patches were present.

Questioning brought to light sufficient information to establish a diagnosis of commencing secondary syphilis.

Under mixed treatment the otalgia entirely disappeared in a few days.

Case III. Hysterical Tinnitus. — I. W., female, aged 37. Came under treatment October 1, 1897. Exceedingly nervous temperament, overworked, with many home annoyances and troubles. Had been very nervous and excitable for some months. One month previously she was wakened in the night by a severe buzzing in her left ear, from which she succeeded in removing a bedbug. To accomplish this she made use of woman's ever ready ear weapon, the hairpin. From this time on she had a most distressing nervous sensation in her ear, loud noises, creeping and scratching impressions, and with it all, loss of sleep and appetite. She was despondent, and thought the bug had destroyed her ear. Examination of the tympanic membrane gave no evidence of excoriation, congestion or inflammation. There was no scar, and, aside from a very slight retraction, it was a healthy and normal ear. Her hearing was normal.

This case represents a type that cannot be overlooked in any general discussion of ear symptoms. Cases of this nature range all the way from the purely neurotic to those where there is some real functional or pathological disturbance due to or associated with disease of other organs. Blake[1] calls attention to them in the following words: " As an example of this may be taken the peculiar and often puzzling cases of variable hearing, occurring in young women, who ultimately become deaf to sounds aerially conveyed." "The great variations, occurring as they do, in girls soon after puberty, or in young women who were subjects of considerable nervous and emotional strain, led, without other ascertainable cause, to the conclusion that these variations were purely of neural origin." * * * "A special study of these cases, however, showed a localized congestion of the tympanic mucus membrane." "Another example of the interdependence of the aurist and the general practitioner is shown in cases of nonsuppurative middle ear disease in which the deleterious changes in the lining membrane of the tympanic cavity are furthered by general nervous overstrain, overtire and disturbance of nutrition."

"The dependence upon local treatment alone often fails of the benefit which might accrue, if a consultation could be had by the aurist and the physician who, as the family adviser, has cognizance of the conditions which may have an important bearing upon the etiology and progress of the case."

Case IV. Sinus Thrombosis, Brain Abscess, Pyæmia, from Chronic Middle Ear Suppuration, Simulating Typhoid Fever and Malaria. — This history is given to call attention to a form of ear complication which often results in symptoms of general disease. J. W., aged 21. Had suffered from a chronic suppuration of the middle ear from childhood, following scarlet fever. During August, 1897, he went to the Catskills for his vacation, and while there was seized with severe chills, high fever and vomiting. Frontal headache was severe, and he returned to the city with what he had been told was an attack of malaria with typhoid symptoms. After his return the symptoms remained the same, the headache becoming more severe, the chills more pronounced and the temperature higher. His family physician, a very able man, made all the tests for both malaria and typhoid, with negative results. Quinine, in very large doses, proved ineffective, and he finally concluded that the disease must be located in the cranial cavity.

It was not difficult to make a diagnosis of infectious lateral sinus disease, with epidural abscess and pyæmia, due to extension from the middle ear. Operation was strongly advised by both family physician and aurist, but was refused. The disease gradually extended, and patient died in about two weeks.

This class of cases have come into far greater prominence of late on account of the success achieved by otologists in saving life by means of early and radical operations. When early diagnosis is made there is every hope of a successful termination providing the operations is skillfully performed along the lines laid down by those who have been the most successful in this line of work. Late operations are usually fatal.

These patients generally come first under the care of the general practitioner for the obvious reason that the symptoms are of a brain, typhoid or malarial nature, with no new ear symptoms.

It may not be generally known, but many life insurance companies now either refuse all applicants who have chronic suppuration of the middle ear, or at least receive them only after an expert opinion has been given as to the probable danger of ear complication.

Ear symptoms due to traumatism are sometimes puzzling. A patient, child or adult, suddenly becomes conscious of loss of hearing in one ear, usually with loud buzzing tinnitus, but with no pain or discharge, often losing sight of the fact that he has received a blow upon the ear by parent, teacher, in friendly scuffle, or by a breaker when in the surf. Questioning will elicit this information and visual examination will reveal a moderate sized perforation of the tympanic membrane. There is another class of traumatic cases more difficult to solve. Reference is here made to those cases of labyrinthine disturbance resulting from indirect violence. A person receives an injury to some portion of the head, from a fall or blow, with resultant symptoms like vertigo, drowsiness, nausea, paine tinnitus, and deafness. A diagnosis in such cases, many times, requires a fuller technical knowledge of acoustics and the methods necessary to determine whether the sound-perceiving apparatus is involved.

Otalgia is a very common, although not constant, symptom in both suppurative and follicular tonsilitis.

As a rule there is no inflammatory process present in the middle ear, and the examination, which should always be made, reveals a healthy condition of the membrane. In these days when so much attention is being given to the diagnosis and treatment of tuberculosis, and especially when the destruction of the baccilli is so strongly insisted upon, we should not lose sight of the fact that a considerable number of our suppurative middle ear lesions are tubercular in character, the bacilli being present in the discharges.

The destruction of the sputum in such cases will not suffice to rid the surroundings from danger unless every possible means is employed to render the pus discharges immune — a thing which is most difficult of accomplishment.

The presence of adenoid or lymphoid tissue in the vault of the pharynx almost always gives rise to ear symptoms, which are more or less characteristic.

Aside from the exanthemata, these growths are the most potent causes of attacks of middle ear suppuration. When these outbreaks are frequent one may almost be sure to find the cause in the nasopharynx.

In patients who do not have suppuration, but who have these growths, there is a condition of the tympanic membrane, associated with more or less deafness, which seems to be almost pathognomonic, and when seen leads one to carefully examine for them. Instead of the normal pearly gray glistening appearance of the membrana tympani, it assumes a dull reddish hue with loss of the light reflex. Mother's statements that her child's hearing is not good should always be heeded, and such proceedings should be instituted as will result in relief, and if possible save the well-nigh endless misery which ensues to those who become deaf. That the presence of adenoids is many times a cause of total and permanent deafness in children has been proven time and time again, and deaf-mutism from this cause is a deaf-mutism which might have been prevented if parents and physicians could have been alive to its seriousness. In a paper on "Adenoid Growths in Deaf-Mutes,"[2] by Frankenberger, of Prague, and translated by Dunbar Roy, he makes the claim that the percentage of adenoids in deaf-mutes is much higher than in the general run of school children.

It must be remembered that in school children about six per cent. have adenoids. Frankenberger says: "I have in the last few months * * * made an examination of the inmates of the Prague Deaf and Dumb Institute, in toto 159. Adenoids were found in 94, or 59.49 per cent., among those who were both deaf and dumb. This remarkable frequency of adenoid growths in deaf-mutes is certainly not accidental, but it must be considered with great probability that they stand in some causal relation to deaf-mutism."

Hackneyed as the subject of adenoids must seem to the members of this society, those who are so often brought face to face with the resultant conditions, even to deaf-mutism, should continue to exhibit the danger signal until all practitioners of medicine everywhere come fully to realize how dangerous they are to child life.

Ear symptoms of more or less severity nearly always accompany the exanthemata, especially scarlet fever and measles. Pain is the most common of these symptoms, but suppuration and even mastoiditis often result. That much can be done to prevent serious results, and that but little is actually done seems to be a fair criticism. Early and frequent examination of the ears should be made in all cases, and, realizing that the ear symptoms arise from the septic condition of the nasal discharges, every possible effort should be made to rid these regions of such septic material. One day's experience in any clinic for aural or nasal diseases will tell a convincing story of the results of the exanthemata. Out of 600 cases of ear affections in children reported by Downey,[3] 38% were found to have originated during attacks of either measles or scarlet fever. In the writer's experience the tendency to necrosis, either of the ossicles, mastoid process, or of the maxillary bones, seems to be greater when following measles than when resulting from scarlet fever.

So long ago as 1858 the late Dr. Edward Clark, of Boston, emphasized the importance of careful attention to the ear during the course of the exanthemata in these words: "So necessary is a careful attention to the ears that every physician who treats such a case without careful attention to the organ of hearing must be dominated an unscrupulous practitioner." Mild defects in hearing due to middle ear catarrh often exist in patients who are wholly unaware of the fact, and only when some new and marked symptom, like tinnitus, appears, do they become conscious of deafness. It has been noticed that tinnitus in this class of cases is more likely to become a troublesome symptom in those individuals who have the uric acid diathesis, and many times the tinnitus will be relieved by attention to this systemic condition.

That carious teeth often give rise to otalgia is so well known that a mere mention of the fact will suffice. In all cases of severe otalgia the teeth should be examined, and if carious, attended to. The dentition period in child life is also a time when outbreaks of otalgia may be expected.

Rheumatic subjects not infrequently complain of pain in the ears, and in making a diagnosis one should not lose sight of this fact.

Conclusions. — No physician can successfully care for cases liable to be attended with ear complications, with justice either to himself or his patient, unless he has the requisite armamentarium and necessary skill to at least make an intelligent examination of the ear. He should be familiar with the normal anatomical landmarks. The instruments needed are few unless one cares for the more complicated ones.

The ability to make such examinations is also important, because by an ocular demonstration that the organ is in a healthy condition one is able to eliminate what may seem to be an important factor in a given disease.

The treatment of the general condition of patients is often most essential for the relief of ear symptoms, often requiring the combined efforts of the aurist and family physician.

Such general condition of the patient being due to disease of some special organ, and at others arising from blood, nervous or digestive disorders.

Any symptoms of acute cerebral disturbance in patients who have chronic ottorrhœa should lead the attending physician to a careful investigation as to whether these symptoms may not be due to extension of the suppurative process into the cerebral cavity.

The discharges from suppurative tuberculous ears should not be overlooked in our efforts to destroy the bacilli.

The removel of lymphoid or adenoid tissue from the pharynx should always be advised, for the preservation of hearing, the prevention of catarrh of the respiratory tract, and to conserve a healthy physical development.

There should be competent aurists upon the staff of every institution for the deaf and dumb.

Medical inspection of public schools not only to detect disease, but to determine defects of sight and hearing, cannot be too strongly urged. Children with defective sight or hearing, and recent investigations prove that the latter are rather more common, should be given every advantage in the struggle for education. Schaeling says: "The results upon its later mental development of a marked diminution of hearing in a child are, unless compensated for by other instruction, decided and permanent, affecting the understanding, the character, the self-confidence, and, at a later period, the ability of self-support, mental tools the possession of which is valuable, and the want of which can never adequately be supplied."

When we consider the influence exerted by the ear upon human life, its intimate association with all the phases of life, being the messenger of all sounds, from the joyous prattle of innocent childhood to the stern sentence of the judge, from the inspiring music of human voices to the thunderous tones of the great organ and the finer strains of finer instruments, from the dull, discordant, rasping noises incident to great cities to the cheering songs of birds and homelier and quieter sounds associated with pastoral life, we can but be convinced that, inasmuch as the responsibility for its preservation depends largely upon the members of our profession, we should make every possible preparation to meet the demand.

Every advancement in the science of medicine and surgery, as well as every increase in the knowledge and efficiency in the individual members of the medical profession, means the saving of human life and the alleviation of human suffering.

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SERUMTHERAPY, INTUBATION AND TRACHEOTOMY.*

TWO YEARS' PERSONAL EXPERIENCE, BASED UPON SEVENTY CASES OF DIPHTHERIA TREATED IN PRIVATE PRACTICE, MAY 18, 1895, TO AUGUST 24, 1897.

By J. L. ARCHAMBAULT, M. D.,

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These several advantages, however, do not offset the four capital objections that we have to intubation: 1. *The scene enacted in proceeding;* 2. *The rejection of the tube;* 3. *Its obstruction;* 4. *The difficulty of feeding.*

As to *the scene enacted when proceeding*, how strikingly different it is in the two operations! In tracheotomy you are slower, it is true, at getting ready, but you proceed quietly, silently, without a cry, without a pain, without a struggle, and — when the family is again admitted the breathing, a moment before harsh and stridulous, has become soft and easy, and generally the child, for so long a time deprived from sleep, is enjoying a quiet rest. But with intubation the child is taken hold of, tied up, strait-jacketed; the assistant has to protect himself by means of some impervious cloth, for, while this way constrained, the child most of the time loses control over his sphincters. The gag is not always easily set in place — cases are quoted where it failed, necessitating recourse to tracheotomy. Is it, however, well in place and the mouth forcibly held open, then the spectacle is shocking; the child appears on the verge of a convulsive crisis. Does the operator fail to introduce his tube, and has he to begin over, it is a repetition of the shocking procedure. In the meanwhile the child has been getting blue, and sometimes so asphyxiated that you are compelled to desist for a time and to try again. And if it was all. But, later on, as you have put this tube in, you have to put it out; it is the same ordeal, the same hideous spectacle. Does the operator fail to grasp and readily remove the tube, every attempt is a dire protraction of the tragical scene, and he has often to desist and to wait, and sometimes he is compelled to resort to chloroform, which has been the experience of professor Hailes, as reported in the MEDICAL ANNALS for 1888.

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* Concluded from May Annals, page 252.

The tube is in place — there arises a new question.

Will it stay there, or is it going to be coughed out? Nobody can tell. A good many statistics have been compiled about it, which goes to show that it occurs frequently. However limited has been our experience, two of our patients rejected their tube.

It is also impossible to know *whether or not the tube will become obstructed.* There will be every chance that it does, from sudden breaking loose of membranous plugs, should there be any tracheitis or tracheo-bronchitis. And this complication, unless you perceive a *flapping curtain sound,* you have no way of finding out with any certainty. At the autopsy tracheæ and bronchi have been found lined with organized exudates in subjects who, during life, had coughed but very little. It is again impossible to know whether fine foreign bodies, such as alimentary particles, milk curds, drops of liquids, will enter or not the air passages. Then the necessity for *constant* attendance of intubated cases. But is such constant attendance very practicable in private practice? I speak of the usual common private practice, the one among the middle classes, and *a fortiori* among the poor. We all know that it is in the midst of such people that diphtheria is most prevailing and reaps its harvest in time of epidemics. Thus we cannot easily admit that cases of intubation require less after-care and a care less assiduous than those you tracheotomized. We cannot, either, believe it safe to intubate outside the hospital or anywhere it is impossible to maintain a constant professional watch over the case. We are not unmindful that, in most of hospitals, at least in this country, tracheotomy has become a procedure of exception and intubation one of choice. Intubation meets also with the same favor at the hands of some physicians in large centres, who are as well equipped as in hospitals, and surrounded with staffs of assistants and able nurses, at liberty to turn at sight the commodious apartments of the wealthy into regular wards, with all implements and necesssary help at command. Their preference is obvious; the method is rapid and easy; they have at all hours everything in readiness; the operator in intubation is close at hand; in an emergency, should suffocation be imminent from sudden stoppage, the nurse is trained to remove the tube, for instance, in pressing it out with the thumbs, after the ingenious manner of Bayeux, adopted by Trumpp and others, and called the *thumb enucleation* (provided, of course, the *short tube* of Collin is used instead of the O'Dwyer's *long tube*). How different — again I insist upon this point — in ordinary practice! either because this array of measures exceeds the means of the family, or because it is a radical impossibility for a physician to devote all his attention to one patient, or to find aids and assistants to act as substitutes. Thus can we fully endorse the following proposition: " Safe when you are well prepared, intubation is unreliable and treacherous, when you are alone, with deficient attendance " (Bayeux); and this accessory one, in contradiction to the opinion of Washam, Northrup, etc.: " The tracheotomized patients are the ones that can be left without too much anxiety to the care of even unskilled attendants." It has been our repeated experience to secure proper care from people most ignorant of the medical art, parents guided by only their natural instinct, nay, a night watchman stationed at the door to quarantine the house, and who would come in, from time to time, and attend to all the details — as in Case 27. All through this epidemic, twice only did we operate in a class of people that could afford the services of trained nurses.

One good thing about tracheotomy, the tube is not rejected, and there is no *sudden* dyspnœa, or very seldom, from its getting obstructed. When it shows signs in that direction, the attendant has soon conquered the pluck to remove and cleanse the internal cannula, restoring thereby its permeability. In a case of urgency he can remove the whole thing and make through the wound an energetic use of the spray; I have had it done many a time. The child gets into violent fits of cough, which carry away pieces of membranes and plugs of inspissated mucus, and this gives the physician the time to be there and to get things into place again. It is a fact worthy of notice that the withdrawal of the whole cannula is seldom followed with immediate suffocation; when it comes it is gradually. With intubation it is the contrary; when it recurs it generally does so in no time. At the Bretonneau Pavilion it has been noticed (Bayeux) to become absolute in less than five minutes. One explanation given of this rapid recurrence is, that the tube being rejected in a fit of cough, this cough keeps on and brings back the spasm. To avoid these fits of cough the greatest care must be had to avoid as well any excitement that may produce cough. And the greatest among all these exciting causes is unquestionably *mouth feeding*.

This brings us to the fourth, and, indeed, the worst disadvantage in intubation, that is, the unavoidable, the often insuperable *difficulty of deglutition*.

And yet the child must be fed; it is his first need, after the one of breathing. Unfortunately, the most of them, at the least attempt to swallow, start coughing violently, and oftentimes suffocate. To obviate this many ingenious devices or procedures have been resorted to. The *inverted position* and the *gavage* have their partisans. Both we have tried, and both to our disappointment. Sometimes they have appeared cruel. The nervosity of some children causes them to combat furiously; they become enraged. Anyhow, in the *inverted position* it may be contended that the aliment given will glide along the palate roof directly to the posterior wall of the pharynx, and therefrom reach the œsophagus, clearing off the glottis entrance, but this is far from an acquired fact. As to the *suction process,* hips elevated, face down, across the attendant's knees or a chair, it appears still less effectual. The only procedure deserving of some credit would be the *gavage* by means of the œsophageal tube, or still better, by a Nélaton's catheter carried through the nares, as experimented in the Boston City Hospital by Dr. Henry Jackson, and which he has termed *nasal feeding.* A great drawback in private practice to this procedure is the necessity for its frequent repetition — about every four hours, says Dr. Jackson — and who is the physician capable of repairing as often as that to the house of his patient? But let us see what is the very recent utterance of a man of much skill on the subject. "The gavage has been extolled," says Mr. Déléharde; "it is not worth while to grant much value to this procedure, for it tires the child and he gets exasperated. The manœuvre is frequently impracticable with children unruly or too young to observe the doctor's instructions." And suppose the case of children older, as unruly and determined to resist?

Then it was said: "*Remove the tube, and give to eat, keeping the tube off as long as possible.*" Attractive theory — if it was not soon discovered that the child, distressed by a hurtful extraction, is far from being always willing to eat, or that, should he be eager to, he cannot accomplish it any better than while he had his tube, from the soreness and the sort of glottis paresis pressure has induced. The fits of cough that soon follow his attempts to swallow rapidly bring back the asphyxia, if, indeed, this asphyxia does not reappear on the very moment the tube is removed. I have witnessed this double fact of children smothering on the moment of the withdrawal of their tube, and who had to be reintubated before having tried to eat, and of children for whom the very attempt to eat became the signal for immediate reintubation. But we suppose that the experiment is successful, the procedure remains one that has to be repeated several times a day, and for several days. It becomes a greater and greater task as it is repeated, and finally, is the intubation period much prolonged, it proves absolutely intolerable.

Thus, and on account of so many objections, has some one (Rabot) been forced to say: " Alimentation is what it can be for the time the child is intubated." Poor consolation, should at least say the party concerned. For our part, we have come to the conclusion to *altogether suppress mouth feeding*. This we have done, for instance, in the one case reported. As a substitute, early in the case, we have used (as in previous cases, although with better success) *food injections*, made of milk and water, largely of water; and as they would fail to assuage the consuming thirst, of which the little patient was giving the most distressing marks, we supplemented them with *prolonged baths*.

But what a difference between these troublesome, quite extreme and unsatisfactory measures and the ease, nay, the delight, which presides over the feeding of our cases of tracheotomy! The next day, and often the very first day, they will sit up in bed, suffering neither from hunger nor from thirst that they cannot gratify, good-humored and playful, asking only for companions to play with, whom serumtherapy denies them no longer.

Although so very much in favor of tracheotomy, I will agree to find to it just one fault: *Death under the knife!* And this is, indeed, a dire occurrence. But as you may have a patient die on the table, you may as well have death occur while you intubate. Valdemar Damm quotes an observation where death occurred while putting the gag, and another while in the act of inserting the tube. Once — it was before the time of serum — I was called to intubate for a confrère. The patient was so far gone that the moment he was stood upright and the gag put in and forced opened he stopped breathing and gave signs of collapse. If we had persisted he certainly would have died on the spot. He died in less than an hour. We speak further on of a case of tracheotomy we lost on the table; the case was just as far gone when we operated — too far gone. Had we been as conservative as in this instance it would be one less experience to recall. Cases also occur where the placing of the tube does not relieve the asphyxia, the trachea becoming plugged by the exudates which the tube rams down on its head. Mr. Variot reports several such instances; the child, breathless, had to be tracheotomized without time being taken to withdraw the intubation tube.

Besides death under the knife, some observers offer other objections against tracheotomy.

For instance, *the necessity to use an anæsthetic,* which increases the danger of asphyxia. About this it is well to discriminate. Two causes concur to establish stenosis, the spasm and the false membranes. Does the spasm predominate, it soon relaxes under the influence of chloroform, respiration is performed with some more ease, and all is for the better. On the contrary, does the tight breathing depend mostly upon the membranes, it becomes much aggravated and the asphyxia may be soon absolute, the child breathes no more and has become apparently lifeless (Case 54 and Case 70); but then, and before that point, you know that you have no longer need of the anæsthetic, that you must lay it aside, and that you have only to precipitate your action by immediate opening of the trachea. Having then no fear of an operating field obscured by the oozing of blood, and performing a sort of tracheotomy at "a single stroke" (after the method of Saint Germain), one-half minute is plenty time for you to insert a cannula, and you now devote all your attention to artificial respiration. Generally your efforts meet with success. Once only did our patient succumb under the operation; it was years ago, and the third patient we ever tracheotomized. The case was more than *in extremis,* it had entered the lethal state, and we were operating at night, by insufficient light, a smoky lamp on the corner of a kitchen stove.

A second objection to tracheotomy is presented in the fact that, being a severer operation, it *causes a greater shock and exposes to more exhaustion.* Such is not our impression. Children are known for the ease and impunity with which they stand the use of chloroform; they come out of its effect either to fall into a refreshing sleep or to return to their usual mood, much in contrast to adults, so susceptible to all kinds of reflexes. Moreover, I cannot understand that the shock, the nervous commotion, should not be less with the child who has felt nothing, who awakens unaware of what has happened him, than with the one whom the operation, with its inevitable restraint, has thrown into all the resistance he was capable of, fighting as he would in the imminence of the most dreaded danger. — And when you have failed and have to begin over? — And when you enter into the after-care? This *cannula child,* whom you have submitted to no violence, is willing to have his attendants — especially if it is his mother — withdraw the cannula, renew the dressings; nothing dreadful in that. But in the case of the *tube child*, does his tube get obstructed, does he appear to be smothering, there is no two ways; he has to be ex-tubated and re-intubated, every time being submitted to the same trying ordeal.

A third objection is that "*the air entering the lungs is not warmed and sifted as it is when passing over the turbinated bones.*" Such an objection can, does it seem, be disposed of by rising the temperature of the surrounding atmosphere, by saturating the air with aromatic vapors, by protecting the opening into the cannula with a good-size sponge soaked in an aseptic solution and well fitting over that opening. Authors (Lewis S. Pilcher, in *Reference Hand-Book of the Medical Sciences*) advise you of simply "covering the external opening with a small veil of two thicknesses of gauze or a thin flat sponge." Even repeatedly wrung out of hot or carbolized water, this will prove a source of much annoyance and trouble, and will sadly disappoint you, from its insufficiency. It must be a good-size sponge that you use, that it may retain its moisture long enough; and a good large thick sponge — comparatively so, of course — does not interfere any more with breathing than a thin flat one.

Again, *infection of the wound* is spoken of: "There is a wound that may be the source of some general infection." For our part we were fortunate enough to never be witness to such an accident, that we ascribe it or not to extreme care and rigid antisepsis.

It is again said that "*the tracheotomy tube by its free end has caused sloughing of the tracheal wall upon which it impinged*," sometimes simple ulceration, sometimes true necrosis. Does intubation insure immunity against such accidents? It seems not; ulceration and necrosis have more than once occurred. Out of 49 *post-mortems* 10 per cent. gave evidence of laryngeal ulcerations; and this information is taken from only one statistic, the one of Dr. Damm. Mr. Variot, in a hospital report, describes a case of false passage through the box of the larynx out under the integument. Grancher, Comby and Marfan, in their work already referred to, disclose a series of other facts just as conclusive, and well brought out by several good and clear plates.

Other disadvantages, of course, are arrayed against tracheotomy, but they are of minor importance, and may be dismissed.

One more inquiry, however, will not be out of place. It is: *Whether the statistics are much more in favor of intubation than of tracheotomy?*

The choice would impose itself and the question would not bear discussion were results everywhere as grand, as extraordinarily inviting as they have occurred at the hands of some observers. Thus, we find recorded at page 14 of the report of the American Pediatric Society (on a *collective investigation into the use of antitoxin in the treatment of diphtheria in private practice*) the following "interesting reports:" Rosenthal, of Philadelphia, 18 intubations, 16 recoveries; Neff, of New York, 27 intubations, 27 recoveries; Booker, of Baltimore, 17 intubations, 17 recoveries; Seward, 8 intubations, 8 recoveries; average, 100 per cent. Perhaps it is safe not to let oneself be carried away with the expectation that such figures will stand good under all circumstances, for, in this same report, side by side with these alluring figures, we find the results reached by O'Dwyer himself, as well as by McNaughton, of Brooklyn. Their figures do not go beyond 66.7 per cent.; before the use of serum these noted gentlemen admit to have registered on an average but half of that figure. To their figures let us compare the figures accepted in France — for instance, those furnished by the Hôpital Trousseau (Dr. Valdémar Damm, of Copenhagen). In the year 1894-95, in one ward (Pavillon Bretonneau), 231 intubations; recovery, 56%. But in 48 cases intubation had to be followed by tracheotomy, *i. e.*, in more than one-fifth of the cases. In 32 cases the attempt at intubating had failed, and by such experts as Mr. Variot, Mr. Bayeux, instructor in intubation. This secondary tracheotomy assisted in saving the intubated cases in the proportion of 16 to 20 per cent. (Variot). Again, Mr. Gillet gives statistics establishing about even figures with either operation, 30 per cent. (tracheotomy), 31 per cent. (intubation).

And *did serumtherapy change this relation?* Not at all. The serum has favored one procedure as much as the other. At least such are the records, for instance, at the "Hôpital des Enfants Malades," 60 and 61 per cent., or in the hands of such practitioners as Chaillou, Ls. Martin, D'Asthos, Saint Philippe de Bordeaux, whose figures turn around the 50 per cent. whether they intubate or tracheotomize.

Therefore these figures — either American or French — have not that discrepancy which would invite one to give up the old Trousseau method for her younger sister.

Still, we are far from disposed to being exclusive, and we will admit of circumstances when it will be preferable to resort to the method Bouchut-O'Dwyer. The bloody operation is sternly declined by the family; of course, one has but one choice, to bow down! Or, truly, there is not time to prepare for a tracheotomy, not a minute to spare, the asphyxia is absolute! Or there is some doubt as to your diagnosis; possibly the case is only one of laryngismus stridulus? When *righting* yourself you would feel gratified to have resorted to the lesser operation. Again, the subject is very young, he is much under two years, and especially is he very fat and short necked; it is admitted that, owing to its being a more difficult procedure, tracheotomy should be left aside and intubation resorted to; statistics seem in favor of doing so. Thus, Booker produces, among his 17 cases, a baby of 10 months, and one of 7½ months. Such, possibly, could have been our experience with Case 46, the baby 9 months 22 days old, had we intubated instead of performing tracheotomy. Our argument and our keen grief, of course, receive the most of their strength from the fact that with tracheotomy the patient was lost.

Such circumstances excepted — and they plainly to us appear to be few — we will not think it improper to continue in the course followed to this day. In a word, speaking from the standpoint of a private practice, such at least as is the one around us, we will intubate, not out of choice, but by necessity, and we will remain a firm advocate of tracheotomy.

Clinical and Pathological Notes.

A Sequel to the Case of Sarcoma of the Epididymis,

REPORTED IN THE ANNALS FOR DECEMBER, 1897.

In a previous number of the ANNALS a report was made of a case of primary sarcoma of the epididymis, removed by Dr. Kathan, of Schenectady. Since this time the patient has died, and, through the kindness of Dr. Vedder, we have been enabled to make an autopsy on the case. The following is an account of the main lesions found at the autopsy:

The patient was aged 48 years. The autopsy was made nine hours after death. The body was that of a strongly built, much emaciated man. Rigor mortis and post-mortem lividity were both present. The surface was pale, with the exception of a few petechiæ over the right shoulder. The left arm was extremely œdematous, evidently from the partial shutting off of its blood supply by a large mass of glands situated in the axilla.

On the anterior surface of the chest, just below the left clavicle, was a rounded mass the size of a fœtal head at term. It was soft, almost fluctuating, and closely adherent to the subjacent tissues. The skin over it was ulcerated in numerous places, the ulcerated surface being covered by flabby looking granulations. The mass in the left axilla, already referred to, was the size of a fist. It had broken down and was discharging thick greenish pus from a large sinus. The left pectoral fold was much more prominent than the right. An incision into the pectoral muscle showed it to be infiltrated with thick greenish-yellow pus, the process being directly continuous with that affecting the enlarged glands in the left axilla. The cervical glands were also much enlarged, as were the axillary glands on the right side. The inguinal glands on the left side were just palpable.

Nothing very striking was to be observed in the internal organs. The heart showed a moderate degree of brown atrophy and there were present at one point in the muscle wall a number of yellowish areas, which were taken to be areas of fresh myocarditis.

The lungs were normal except that at the apex of the right lung there was an area of consolidation, containing a number of pin-head to pea sized caseous, tubercular foci, surrounding which the lung substance had the translucent appearance characteristic of gelatinous pneumonia.

The spleen was enlarged and firm and presented the usual characteristics of chronic passive congestion, this being apparently due to pressure on the splenic vein from the enlarged retro-peritoneal glands.

The liver showed merely cloudy swelling.

The ureter on the left side was included at its lower portion in a mass of enlarged glands, but was not entirely occluded. The pelvis of the left kidney was slightly dilated. The organ showed merely a moderate degree of cloudy swelling.

The right kidney was intimately adherent to the mass of enlarged retro-peritoneal glands, and its upper two-thirds was infiltrated by an homogeneous yellowish-white new growth. The uninvolved portion was similar in appearance to that of the left kidney.

The stomach, bladder, adrenals and remaining thoracic and abdominal organs showed no change.

The retro-peritoneal glands were tremendously enlarged, infiltrated by new growth and matted together, forming a large mass which projected markedly into the abdominal cavity.

On section of the various groups of enlarged glands and of the large tumor occupying the chest wall, a similar appearance was seen in all cases. These affected areas were all infiltrated with a new growth, somewhat soft in consistency, and of a homogeneous pinkish-white color. There was no evidence of any return of the disease in the scar in the scrotum, and the left testicle was normal.

Microscopical examination of the tumor masses from the various parts of the body showed that they were all of the same character, and all had the same appearance as the tumor of the epididymis originally described. The tumors were made up of small round cells with vesicular nuclei, and a small amount of protoplasm. The cells were densely packed together without any definite arrangement and practically no connective tissue was present in the tumors. A large number of thin walled blood vessels, however, could be made out.

The case is especially interesting in that the metastases had all occurred by means of the lymphatics rather than by the blood vessels, which latter are the usual carriers of metastases in sarcomata of this variety. An explanation of this fact, however, is not very difficult to find when we remember the enormous lymphatic supply of the testicle and its intimate relations with the other lymphatics, particularly those of the abdomen. In some of the lower animals the relation between the testicular and abdominal lymphatic supplies is so extensive that it is possible, by making an interstitial injection into the testicular substance, to inject almost the whole abdominal lymphatic apparatus.

GEORGE BLUMER.

A Clinical Case.

Nellie F., aet. 15. Was well as a child. Menses appeared at 14, were always regular and painless. Five years before, while playing in an unfinished building, she fell through the floor to the cellar beneath, striking the abdomen upon the edge of an upright board. She was picked up unconscious and taken home. Since this accident she has had, about every three weeks, attacks of severe pain in the abdomen, shooting up into both arm-pits, accompanied by chills and bilious vomiting. The pain was so severe that she could not lie still, but would sit up and twist herself into all sorts of positions. The vomiting would relieve the pain for a few minutes and then it would come on again as bad as ever.

Present Condition, January 20th, 1898. — Patient is thin and pale, with a waxy complexion. Her appetite is fair and she sleeps well. She has not a trace of color in her face and she seems to have no strength. The attacks are increasing in frequency and violence, and there was only two weeks' interval between the last two. The final attack was very severe, lasting three days, during which time the child seemed to be in great agony.

Treatment.—No medicine of any kind was given, and the treatment was entirely electrical. Every other day the abdominal muscles were stimulated for ten minutes with faradism, taking the different motor points in turn. Since the treatment was commenced the child never had a return of the attacks. As the treatment advanced it was increased in range so as to take in the muscles of the chest and the large back muscles, such as the latissium dorsi, trapezius, etc. This treatment was kept up for over two months and the child was discharged cured. Her condition during this time had undergone a decided change. She had gained considerably in flesh, the color had come back to her cheeks, and she complained no more of being tired. At the present writing, four months after the beginning of treatment, the patient is still perfectly well. W. F. ROBINSON.

Editorials.

The Albany Guild for the Care of the Sick Poor.

The ANNALS is again privileged to call attention to the work and purposes of this organization. In the report of the proceedings of the annual meeting of the Albany County Medical Society, on another page of this issue, may be found a communication from the Guild, setting forth concisely and briefly its objects, and the resolutions of the Society giving official endorsement.

The Guild was organized in 1880 by charitably inclined ladies of Albany as a " Fruit and Flower Mission," and in 1889 was reorganized with a plan for the employment of trained nurses for district work. In 1896 the above corporate name was adopted and, in 1897, a department of visiting nurses for people of moderate incomes was added. That the Guild fills a place in the medical practice of the city was revealed in the unstinted commendation given at the meeting of the County Society by physicians familiar with its purposes. With the assistance of the Guild the physician's work among the poor is not only lightened, but becomes more effective. Beyond this is an opportunity for the centralization and organization of charity with almost unlimited possibilities. The ANNALS commends the Guild to the physicians and citizens of Albany, and its scheme of organization and administration to other cities less fortunate than Albany in this particular line of work.

The Tuberculosis Committee.

The tuberculosis committee of the State Board of Health has great difficulty in securing sufficient funds with which to carry on its investigations and to free the State of tubercular cattle. In 1896 the committee had $20,000; in 1897, nothing, as the governor vetoed the $15,000 allotted in the supply bill, on the ground that it was "inadvisable." In 1898 the committee asked for $50,000, but the finance committees in the legislature cut the item to $10,000, which the governor signed.

The secretary of the board says that this amount is barely enough to pay the expenses of the committee and to carry on the education of the farmers in the way of improving the condition and health of their stock by cleanliness, proper care, etc.; also that it would require fully $1,000,000 to clear the State of tubercular cattle now within its borders.

Obituary.

HENRY G. McNAUGHTON, M. D.*

The name of McNaughton first appeared on the chronological list of the members of this society in 1828, seventy years ago. The two brothers, James and Peter, sons of a God-fearing Highlander, of Perthshire county, Scotland, and graduates of the University of St. Andrew, came then to this country, and to Albany fell the fortune of their choice of a home and a professional life. For fifty years they filled a large place in all that went to make up the vitality of this city, its business, its education, its medical work and associations. Many of the members of this society know them only from report, but they were too conspicuous to pass from memory and mention, and although a generation has passed since they finished their good work, there are many homes in this city where the recollection of them is treasured as types of the best in the family physician, while their profession will always preserve them as among its worthiest representatives.

Dr. Henry G. McNaughton, whose recent death is the occasion of this meeting, was the son of Dr. Peter McNaughton, and with him passes away the last connection with us of this good name.

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*A memorial note, presented to the Albany County Medical Society, by F. C. CURTIS, M. D., at a special meeting held April 21, 1898.

His name appears on our society list in 1856, the same year in which he received his degree of doctor of medicine at the Albany Medical College, and twenty-eight years following that of his father. He was thus himself among the oldest members of our society. The name of Dr. Jos. Lewi, who died not many weeks since, preceded him on the list by a few years, and Dr. Newcomb, who recently passed away, followed his in becoming a member by a year.

In earlier years he was often present at our meetings. He was not of an assertive personality, pressing for prominence, and I think he never held an office in the society. Of recent times, from failing health and retiring disposition, we have seen less of him in our midst and have less frequently encountered him on the streets.

He was a man of the kindest and most genial disposition, and it was always a satisfaction to come in personal contact with him. He preserved the memory of the past and of associations most agreeable, and of a personality always attractive.

It is always with sentiments of sorrow and regret that we meet as on this occasion to do honor to the memory of an associate whose death severs all but the memory of what he has been to us, and we would record that sentiment now on this new occasion, when one has passed away whose quiet life has for so many years passed on before, the recollection of which is tinged with no single untoward thought, and whom we part with in this sphere of visible life with the sadness of a farewell.

ALFRED L. BROWNE, M. D.

Dr. Alfred L. Browne was born at Schaghticoke in 1863. Having received his preliminary education at Cohoes, N. Y., he entered Union College, and, upon graduation, took up the study of pharmacy in New York City. He received a degree from the New York College of Pharmacy, but, having become interested in the study of medicine, he entered the Albany Medical College, and was graduated in 1888. Returning to the metropolis he took a special course in surgery, and spent some time in the old Chambers Street and Bellevue Hospitals. He began the practice of medicine in Cornwall-on-Hudson and remained there until the time of his death, which occurred May 3rd, 1898, from apoplexy.

Dr. Browne's activities extended over a wide range, both in the special field of medicine as well as in the domain of municipal and social life. He was a member of the Orange County Medical Society, was post surgeon and lecturer at the New York Military Academy; was surgeon of the West Shore and Ontario & Western roads, and an active member of the National Association of Railway Surgeons.

Dr. Browne was a trustee of the Cornwall Savings Bank and health officer of the village for many years. He was also a trustee and president of the public schools for some years. A wife and two children survive him.

Dr. Browne, in the short period allotted to him in public life, had acquired a permanent and substantial position in the town of his adoption, and pleasant memories of his young manhood still linger in the city of his youth with his early friends, among whom is the author of this brief sketch. J. D. F.

Medical News.

THE ALBANY COUNTY MEDICAL SOCIETY. — A special meeting was held Thursday afternoon, April 21, 1898, the President, Dr. J. V. Hennessy, in the chair, to take action on the death of the late Dr. H. G. McNaughton. Upon motion of Dr. Tucker a committee, consisting of Drs. F. C. Curtis, T. F. C. Van Allen and J. W. Wiltse, was appointed, who presented memorial resolutions which were adopted by the society and the meeting adjourned.

The annual meeting was held Tuesday evening, May 10, 1898, the President, Dr. J. V. Hennessy, in the chair. The treasurer's report was received and accepted, showing a balance on hand of $118. The board of censors reported favorably upon the applications for membership of Drs. C. H. Richardson and H. J. Lipes, and they were regularly elected. A committee appointed to prepare, with Dr. Moore, the former secretary, two volumes of the minutes of the year 1896–7, reported that two volumes had been prepared, one of which had been deposited in the State Library. The applications for membership of Drs. John Archibold, Fred. Sauerbrie and Martin S. Reid were presented and referred to the censors. The president read the following communication from the Albany Guild for the Care of the Sick Poor:

ALBANY, N. Y., *May 9th*, 1898.

Dr. J. V. Hennessy, President of the Medical Society of the County of Albany:

MY DEAR SIR. — The Board of Managers desires to call the attention of your honorable body to the work of the Albany Guild for the Care of the Sick Poor with its department of visiting nurses, as defined in the enclosed circulars, feeling that when thoroughly understood it will appeal to the judgment of all physicians.

It will be seen that the Guild not only gives competent care to the very poor, but also enables those who are unable to pay the regular rates for trained nurses to receive a professional care from the visiting nurses at a very moderate charge for such service.

Realizing that the work as so planned cannot reach its highest possibility of usefulness without the cooperation and cordial support of the medical profession, the managers would respectfully call the attention of your society to the following points:

1. The value to both physician and patient of the wider application of trained nursing.

2. The opportunity given the district nurse to enforce better sanitary conditions in the homes of the poor; the work thus being preventive as well as curative.

3. The disadvantage to physicians — in much of their gratuitous service to the poor — in the utter disregard of orders, and the counter-advantage of knowing that under the direction of the Guild instructions will be carried out with exactness by trained professional nurses.

4. The saving of time in the more rapid restoration to health of the patient and the saving of expense in the fact that the Guild can supply nourishment, tonics and prescriptions when it is found that it is impossible for the family to make such provision.

On the other side of the question, the advantages to the Guild in having the support of and recommendation of physicians cannot be overestimated.

Very truly yours.

(Signed) MARY WHITE OLCOTT,
Secretary.

The communication was discussed by Drs. Curtis, Neuman, Mosher, Lochner and MacFarlane, and the following resolutions, presented by Dr. MacFarlane, were unanimously adopted:

Resolved, That the Albany County Medical Society hereby endorses the work of the Albany Guild for the Sick Poor, and its Department of Visiting Nurses, as set forth in the communication and accompanying circulars laid before the society, believing that in the care and treatment of needy persons, the assistance of qualified nurses as indicated, is in accordance with the requirements of modern practice; and

Resolved, That these resolutions be inscribed upon the minutes of the society, and that a copy be sent to the Albany Guild for the Sick Poor, for such use as is deemed suitable by the Guild.

Dr. Hennessy then read the President's address on "Post-Partum Hæmorrhage." Upon motion of Dr. Boyd, the thanks of the Society were extended to Dr. Hennessy for his excellent address, and a copy was requested for publication in the ALBANY MEDICAL ANNALS.

The Society proceeded to the election of officers for the ensuing year, with the following result:

President, Dr. J. L. Archambault; Vice-President, Dr. G. L. Ullman; Secretary, Dr. L. H. Neuman; Treasurer, Dr. W. H. Happel; Censors, Drs. J. D. Featherstonhaugh, J. M. Mosher, T. M. Trego, J. W. Wiltse, and T. F. C. Van Allen.

THE ALBANY HOSPITAL. — The following changes have been made in the medical and surgical staff:

DR. JOHN M. BIGELOW, formerly Attending Specialist, appointed Consulting Physician for Diseases of the Throat and Nose.

DR. WILLIS G. MACDONALD, formerly Assistant Attending Surgeon, appointed Attending Surgeon.

DR. ARTHUR G. ROOT, formerly Dispensary Physician, appointed Attending Specialist for Diseases of the Throat and Nose.

DR. MARTIN MACHARG, appointed Dispensary Physician.

DR. GEORGE BLUMER, appointed Pathologist.

As the result of competitive examination, DR. ALVAH H. TRAVER becomes Senior House Officer, June 1, 1898, and DR. CHAS. G. MCMULLEN becomes Junior House Officer, July 1, 1898.

ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE. — A meeting of the executive committee was held on the afternoon of May 10th, at which the matter of printing the proceedings of the twenty-fifth annual meeting of the association in the ALBANY MEDICAL ANNALS, and in separate form, was provided for, and the vacancy in the committee, caused by the election as corresponding secretary of Dr. MacFarlane, was filled by the choice of Dr. C. Harper Richardson. The president, Dr. Tucker, spoke at some length on the advisability of a change in the method of electing officers of the association, and also suggested that at the next annual meeting some greater interest be shown in the class reunions. After general discussion sub-committees were appointed to consider these subjects and were directed to formulate plans and report at the next meeting of the executive committee to be held in the autumn.

PERSONAL. — Acting Assistant Surgeon Edgar A. Vander Veer, U. S. A. (A. M. C., 1898), has been ordered to Atlanta, Ga., to report in person for duty to Major Blair D. Taylor, Surgeon, in charge of the General Hospital, Fort McPherson, Ga.

— The New Hampshire State Library wishes to obtain by gift a complete file of the ALBANY MEDICAL ANNALS, and requests any one having copies to spare to address

NEW HAMPSHIRE STATE LIBRARY, *Concord, N. H.*

Book Reviews.

House-Drainage and Sanitary Plumbing. By WM. PAUL GERHARD, Civil Engineer; Consulting Engineer for Sanitary Works; Member American Public Health Association; Corres. Mem. Am. Inst. of Architects, etc. Seventh edition. 12mo. 231 pp. Van Nostrand's Science Series. Price 50 cents. 1898.

The author is a voluminous contributor to the literature of sanitary science. The considerable number of editions which the book has reached indicates a demand for it. Its title sufficiently shows the scope of its contents. The present edition contains no changes from that preceding it, nor is there special occasion for it, although something might have been said in the chapter on sewer-gas in reference to the studies of J. Parry Laws upon the relation of sewer air to the germs of infectious diseases; this short chapter, however, is satisfactory for the amount of space given it. The common principles of house plumbing are well presented and need no special criticism. Many health officers and sanitary inspectors will find this a convenient hand-book for ready reference, and all who desire certain information on this subject will find it useful. F. C. C.

A Compendium of Insanity. By JOHN B. CHAPIN, M. D., LL. D., Physician in Chief, Pennsylvania Hospital for the Insane; late Physician-Superintendent of Willard State Hospital, New York; Hon. Member of the Medico-Psychological Society of Great Britain, and of the Society of Mental Medicine, Belgium, etc. Illustrated. Philadelphia: W. B. Saunders, 925 Walnut St., 1898.

It is no easy task to write a compendium. Preachers aver that the sermon of twenty minutes or less which their hearers most enjoy implies effort and skill inversely to its length. One can imagine, then, the difficulty experienced by the distinguished author of this little manual in writing compendiously, within the compass of less than two hundred and thirty small pages of large type, upon a subject that has occupied a professional career of considerable length and uncommon richness. And yet the text betrays no evidence of such difficulty. Every page reflects the " guide, philosopher and friend " who from start to finish conducts the reader, who is assumed to be a medical student or general practitioner, by short cuts to a comprehensive knowledge of the subject with which the author is himself so familiar.

In a brief introduction an attempt is made to analyze the mechanism of mind. Here are no fine-spun theories to bewilder the tyro. The author admits and dismisses the besetting difficulties with the conservative and orthodox observation that " it should not be the reproach of science if it be not given to man, with his mundane qualities, to comprehend the mysteries of the Creator." Once upon practical ground, he proceeds to draw upon a mine of clinical experience. The definitions of terms and diseases are well done; the detailed descriptions are, on the whole, admirable, and only such as a careful and painstaking observer of symptoms could have written. But it is especially in the domain of treatment that the general practitioner will find what he needs and what, one may add, is often lacking in larger and more pretentious works. The chapters on the management of melancholia and mania are especially suggestive and helpful, and precisely what the perplexed physician will welcome as safe guidance in despair, if for any reason his patient cannot receive hospital care. Useful hints are given as to the method of examining patients for commitment as well as how to detect feigned insanity, and the medico-legal relations of the subject are carefully, if briefly, considered. The chapter on morbid anatomy, written by Dr. J. M. Mosher, is up-to-date, and, in its way, a masterpiece of condensed information. On the whole, while the dominant note of this little book is conservatism, one can recommend it unhesitatingly for the purpose for which it was written and bespeak for it the reception to which its merits entitle it as a trustworthy guide for the practitioner and student. The publishers are to be congratulated on an excellent bit of bookmaking, and too much cannot be said in praise of the illustrations of types, taken from the life, introduced here and there to help out the author's word pictures.

G. A. B.

Current Medical Literature.

Recent Bacteriological Studies in Typhoid Fever.— Dr. Mark W. Richardson read a paper upon this subject at the meeting of Medical Board of the Massachusetts General Hospital, Dec. 10, 1897 (*Boston Medical and Surgical Journal, February 17, 1898*). The paper includes the results of the experience in the hospital since August last. Of 45 cases in which the Widal reaction was tested, there was late reaction in 7, one occurring as late as the 41st day. The conclusion was that, whereas a positive reaction indicates almost absolutely a typhoid infection, present or past, a negative result carries with it little, if any, diagnostic significance. There are few cases in which the typhoid bacillus cannot be isolated from the stools. It rarely appears before the end of the second week, and may persist for a long time after the cessation of the fever, having been found as late as the 41st day of convalescence. Investigations were also carried on with reference to the presence of the typhoid bacillus in the urine. Cultivations were made from 95 specimens from 24 cases. In 26 of these specimens, representing 7 cases, the typhoid bacillus was found. The organisms do not generally appear until late — about the end of the third week. The interest which attaches to this series of observations lies, not so much in its relation to diagnosis, as to disinfection and public health. It seems possible that irrigation of the bladder may hasten the disappearance of the bacilli, for it is thought that they may remain long enough after the discharge of the patient to start fresh epidemics. Richardson also conducted some experiments in the direction of a search for typhoid bacilli in the sputum, and was able to determine their presence in a few instances. He finally reported three cases in which an attempt was made upon cadavers to trace the source of the infection of the gall bladder. These observations were not conclusive, but in one case evidence was given favoring the opinion of an ascending infection.

Heart Complications in Diphtheria. — Hibbard summarizes the study of 800 consecutive cases of diphtheria observed at the South Department of the Boston City Hospital (*Boston Medical and Surgical Journal, January 27, and February 3, 1898*). His conclusions are:

(1) A rapid pulse rate in diphtheria is to be dreaded. Death usually results when it exceeds 150.

(2) A slow pulse — 60 in young children — is a sign often of serious heart trouble.

(3) Irregularities in the pulse occur in about ten per cent. of the diphtheria cases, and are generally significant of cardiac complications.

(4) A systolic murmur at the apex is heard in about one case in ten, and its prognostic value depends upon the nature of the cause.

(5) A *bruit de galop* in diphtheria is a most fatal sign.

(6) After four weeks, with no heart symptoms in diphtheria, there is little probability of subsequent cardiac trouble in the convalescence.

(7) All diphtheria patients who have tachycardia, bradycardia, irregular pulse or weak pulse, a systolic murmur at the apex, vomiting or any paralysis — especially palatal — should be kept quiet in bed.

(8) The most important element in the treatment consists in absolute rest in bed.

(9) The vagus nerve, in the fatal cases, always had some evidence of degenerative changes. The weight of the heart was increased.

(10) The cause of death is usually from cardiac thrombi, dilatation or paralysis, produced most probably by the toxin of the diphtheria bacillus.

Total Vaginal Extirpation of a Carcinomatous Uterus at the End of Pregnancy. — Fritsch discusses this subject and reports a case in the *Centralblatt für Gynækologie. No. 1, 1898, January 8.* The writer has twice performed this operation by abdominal section, and found the operation very difficult, bloody and of long duration. In both of his cases the operation was successful, but the patients succumbed in relapses. His patient menstruated the last time in November: the first fœtal movements were felt in March following. During the pregnancy there occurred irregular, although slight hæmorrhages. In the intervals between the hæmorrhages there was a dark brown, watery, strong-smelling discharge, and also persistent drawing abdominal pains. On June 25 the fœtal head was movable above the brim, and the fœtal heart sounds were normal at the left side. Vaginal examination revealed the carcinoma extending along the right side, and involving the posterior lip of the cervix. Preparation for total extirpation was made, but the next morning the os was found to have dilated and labor pains had begun during the night. The forceps were applied upon the high-lying head, and the child delivered. The child was living, but very weak and small. The placenta was removed and then the uterus was removed by the vaginal route. Afterward the patient was very weak, normal salt solution was transfused and hypodermatic injections of æther were administered. She rallied nicely and recovered, and up to this time there has been no indication of return of the disease.

The result leads the writer to the conclusion that abdominal extirpation in these cases is not justified, and that the vaginal route for Porro's operation, or for Cæsarean section, or for total extirpation is to be preferred. His case shows that the puerperal uterus is not too large for this procedure, and that the steps of the operation are as he has indicated — first, delivery of the child, then of the placenta, then removal of the uterus. He also believes that the vaginal route is preferable for removal of the ruptured uterus.

Pupillary Disturbances in Hysteria. — A Westphal, in the *Berliner Klinische Wochenschrift*, cites in detail three interesting cases of pupillary disturbance associated with hysteria. In the first the pupils were very contracted, and failed to react to concentrated light-rays; occasionally the pupils were seen to dilate, and then it was possible to get a prompt reaction to light. In the second case there were limited bulbar motion, convergence, diplopia and myotic and non-reacting pupils. It was possible to alter these conditions by hypnosis. In the third case the pupils were widely dilated and non-reacting to light. In the first two the pupillary conditions existed only between the hysterical seizures; in the third during the attacks themselves. In none of these cases was the pupillary condition permanent. Central (cortical) irritation or paralysis is mentioned as a possible explanation of these pupillary phenomena, associated with hysteria. C. M. C.

The Internal Secretion of the Ovary. — G. E. Curatulo and L. Tarulli (*Gaz. deg. Ospedali, Jan'y 17, 1897*) made experiments with this secretion on bitches and mice, and state the following results: Removal of the ovaries has a notable influence on the organic metabolism; the weight of the animal increases; phosphates are found less abundantly in the urine, and nitrogen presents slight variations. Carbon dioxide is eliminated, and the oxygen absorbed in respiration diminishes strikingly up to a certain limit, then remains stationary. Injection of ovarian juice in castrated bitches increased the excretion of phosphates greatly beyond what could be accounted for by the phosphates contained in the injection. Removal of the uterus and appendages did not modify these results. The diminution of the products of respiration, together with the diminution of the amount of oxygen absorbed after removal of the ovaries, necessitates a diminution in the oxidation of the ingested food, due to a diminution in the biochemical processes taking place in the tissues of the organism.

The results following the injection of ovarian juice (increase of phosphates) leads one to admit that there occurs within the ovary the secretion of a hitherto unknown substance favoring the combustion of organic phosphates. The authors suggest in this connection removal of ovaries for mollities ossium. On the basis of their experiments the authors then form the following theory:

" The ovaries have an internal secretion by means of which they furnish the blood continually with an unknown product, whose more essential characteristics are such as to favor the oxidation of phosphatic compounds, the hydrates of carbon and of the fats. From this it follows that, either because of the removal of the organs, or because of the suspension of function on their part, as in the period before puberty, and that of the menopause, there must occur an increased retention of organic phosphorus, whence, on the one hand, the larger accumulation of calcareous salts in the bones, and on the other the well-known phenomenon of obesity after ovariotomy and during the menopause." W. H. H.

Practical Therapeutics.

The Value of Pyramidon. — Lépine has always found pyramidon of value as an analgesic. In the lancinating pains of tabes, after all other remedies and finally morphine had proved unavailing, it was effective in daily doses of twelve grains. In neuralgic and neuralgiform pains of different origin it was almost always more valuable than antipyrine, and always well borne. The writer made few experiments in its use as an antipyretic, but obtained, however, in doses of four to five grains, a marked reduction in temperature.

Association of the Alumni of the Albany Medical College.

Twenty-fifth Annual Meeting.

The twenty-fifth annual meeting of the Association of the Alumni of the Albany Medical College was held in the Alumni Hall on Wednesday, April 20, 1898. The usual formal reception was held in the library, where photographs were exhibited and greetings exchanged, between the hours of 9 and 10:30 A. M. The meeting was called to order by the President, Dr. Hamblin B. Maben ('57), of Kingston, N. Y., at half past ten o'clock.

The following members of the Association, with invited guests, students of the college and others interested were present: I. I. Buckbee, ('41); H. D. Wells, H. B. Maben, ('57); C. E. Smith,

L. H. Hammond, ('58); H. Bendell, A. Vander Veer, ('62); A. B. Huested, ('63); J. V. E. Winne, ('67); L. Hale, ('68); J. J. Ward, ('69); W. G. Tucker, Wm. Hailes, D. C. Case, ('70); G. L. Ullman, Jno. Ben. Stonehouse, ('71); C. K. Frasier, ('73); J. F. Barker, James Warwick, ('77); W. O. Stillman, J. H. Cotter, G. P. K. Pomeroy, H. Lilienthal, ('78); E. A. Bartlett, W. J. Nellis, ('79); R. W. Warner, G. S. Munson, ('80); J. H. Mitchell. T. W. Nellis, L. T. Vedder, ('81); T. F. C. Van Allen, W. E. Deitz, F. A. Palmer, ('82); W. F. Robinson, J. V. Hennessy ('84); M. McHarg, ('85); J. A. Cutter, ('86); C. H. Moore, A. MacFarlane, ('87); C. F. Clowe, R. F. Macfarlane, J. M. MacClellan, F. H. Lee, J. Archibold, E. E. Potter, ('88); A. H. Bayard, J. M. Mosher, ('89); W. A. Alexander, E. S. Simpkins, ('90); W. G. Lewi, E. E. Reichard, W. I. Goewey, L. H. Neuman, ('92); P. G. Waller, J. S. Wade, T. W. Jenkins, ('93); W. H. George, ('94); W. J. Wansboro, F. Sauerbrie, C. L. Myers, E. N. K. Mears, L. G. Stanley, F. J. Crummey, F. J. Resseguie, ('95); A. E. Falkenbury, ('96); C. C. Cole, J. Giffen, W. C. McCulloch, H. J. Lipes, J. H. Fallon, C. H. Richardson. A. J. Ronan, ('97); C. W. Skelton, M. Bruce, R. W. Andrews, D. J. Jenkins, F. M. Johnson, W. R. Nichols, F. B. Weaver, B. G. Troidle, C. F. Kevlin, T. D. Collins, H. R. Bently, J. A. Barnes, G. M. Gilchrist, O. Z. Bouton, A. H. Traver, G. B. Stanwix, W. N. Campaigne, C. S. Prest, E. Howd, A. L. Newton, W. J. McGrath, J. F. Rooney, E. A. Vander Veer, C. A. Shultes. R. A. Kirkpatrick, L. B. Schneider, H. A. Bryant, J. J. Mulcahy, J. A. Gaul, L. B. Honeyford, E. Stevens, J. J. Osterhout, F. I. Jansen, W. R. Miller, R. L. Leak, D. L. Van Derzee, J. M. Cronk, ('98); C. S. Merrill, H. Hun, (hon.).

The President introduced Professor Willis G. Tucker, M. D., who delivered the following address of welcome to the alumni on behalf of the college faculty:

ADDRESS OF WELCOME.

Mr. President and Fellow Alumni:

This year the pleasant duty has been assigned to me of extending, on behalf of the faculty, a most cordial welcome to those members of our association, who by their presence to-day, manifest the interest which they feel in their *alma mater.* To be standing here, and no longer in the secretary's desk, which, since the organization of our association I have occupied, seems rather unnatural to me, but the pressure of much other work last spring made it so clear to me that it was far better both for myself and the association that I should relinquish the task which, for nearly a quarter of a century, has been so great a pleasure, that when my friend Dr. Mosher—the son of an alumnus, a former professor, registrar and ex-president of our association, whom to know personally was the good fortune of many of us, and whose memory all who knew him most affectionately cherish — expressed a willingness to take upon his younger shoulders the duties which he is so well qualified to perform, I lost no time in sending my resignation of the office to which, through your favor, I have been twenty-three times re-elected, to the executive committee. Dr. Mosher was nominated to fill the vacancy and immediately elected to the position as provided by our by-laws for the filling of vacancies occurring in office during the interval between our annual meetings, and for him I bespeak the same considerate treatment that you have always extended to me.

The year just closing has been a successful one in the history of our college. The total attendance has been smaller than last year, but all the other colleges in the State have had a similar experience and, indeed, we all expected that it would be so. The adoption, with the session just closed, of a four-year course and the increased entrance requirement of forty-eight academic counts exacted by law, of all students entering the colleges after January 1, 1897, very naturally led many young men to anticipate the beginning of their college course and enter last year under the less stringent requirements, if they could possibly do so, and therefore the falling off this year has not at all surprised us. The experience of many schools has shown that the adoption of a four-year course has always been followed by smaller entering classes, but that, after a short time, there is a return to normal attendance. We have every reason to expect that this will be our experience, and while our total registration this year is 195, against 244 last year, it is nevertheless larger than that of any other year prior to the session of 1894-5. We have certainly every reason to be satisfied with our growth which, if it has not been phenomenal, has at least been healthy and constant. We have done what we could, from year to year, to improve our methods of instruction, and it would seem that with our increased preliminary education requirements, our more systematic methods of teaching, and our greatly lengthened course, we should be graduating a class of men far superior to their predecessors who pursued a much shorter and a very different course in the older days, but I should hesitate to assert that such is indisputably the case. So much has been said of the crying need of reform in the method of medical education in the past that I should hesitate to dissent from the very generally expressed opinion that our more modern methods are in most, if not in all, respects superior, but I certainly am less inclined than are many other teachers, examiners and law makers to believe that the average attainments of the graduates of our colleges to-day are higher than those of a decade or two ago in proportion to the increased demands now made upon them. But in this connection it ought to be borne in mind that the constant changes which have been made in the legal and college requirements during recent years have had a disturbing influence upon students, so that we may hope that, despite temporary confusion and some hardship, real progress is, after all, being made, and that when our legal requirements shall be definitely fixed, so to remain for a reasonable time in the future, and our educational methods be better adjusted and more permanently arranged, we may reasonably expect to see the professional standard raised, and our medical men better equipped than ever before for the practical discharge of their very responsible duties.

With slight exceptions our faculty and teaching force remains the same as last year. We have installed some new apparatus, including a first-class electric lantern and projection outfit, and very complete X-ray apparatus, and the Bender Laboratory, which was opened for instruction last year, has proved a most valuable acquisition. Ground has been broken for the new Albany Hospital and, with the session after next, we may expect to see our clinical work greatly enlarged and improved in so far as it is to be carried on in this modern and splendidly equipped institution. The training school for nurses is well organized and will soon close its second and very successful year of instruction, and our next need, a new college building, must, before very long, be taken up most seriously for consideration.

In closing may I call attention anew to another matter of interest to all alumni, I hope, our official organ, the MEDICAL ANNALS. We know that you have all seen it and trust that you have all watched its steady growth and constant improvement. It is a journal of which none need be ashamed but all may well be proud, and we commend it to your interest and ask for it your continued support.

And now, gentlemen, we again bid you welcome to this place from which at various times you have gone out, but to which all may return as to their professional home. We trust that the day may be pleasantly spent by you all and that in renewing old associations and in making new friendships your interest in your *alma mater* may be increased and your desire to promote her prosperity, strengthen her influence and extend her good name, may be kindled anew.

On motion of Dr. John A. Cutter, the thanks of the Association were tendered Dr. Tucker for his interesting address.

On motion of Dr. W. G. Tucker, the reading of the minutes of the last annual meeting was dispensed with, and the minutes as printed were adopted.

Dr. D. C. Case moved that the President appoint a committee of five to nominate officers for the ensuing year. Carried. The President appointed as such committee: Drs. D. C. Case ('70), R. F. Macfarlane ('88), A. B. Huested ('63), J. H. Mitchell ('81), and T. W. Jenkins ('93). The committee retired.

The report of the executive committee and recording secretary was presented. It stated that two meetings had been held during the year. At the meeting held May 13, 1897, the recording secretary, Dr. Tucker, presented the records of the last annual meeting of the association, including an account of the commencement exercises, and it was ordered that this be printed in the ALBANY MEDICAL ANNALS, and that fifteen hundred reprints be purchased by the association and distributed in the usual way. At this meeting Dr. Tucker presented his resignation as recording secretary of the association, which, after some discussion in which the long and valuable service rendered the association by Dr. Tucker was eulogized, was accepted, and Dr. J. M. Mosher was chosen to fill the vacancy thus created. At the meeting held January 31, 1898, the distribution of the proceedings was reported. A copy had been sent to each alumnus whose address was known, together with a college catalogue and treasurer's blank. The order of exercises for Alumni Day was discussed, and the following committees were appointed: committee of arrangements, the recording secretary, treasurer, Drs. Tucker, MacFarlane and Nellis; reception committee, the president, corresponding secretary, historian, Drs. Cook, Sabin, Happel, Lewi, Vander Veer, Washburne, Babcock, Bendell, Mereness and Root. On motion, the faculty of the college were invited to participate in the exercises of Alumni Day and to appoint some representative to deliver an address of welcome to the Alumni at the opening of the annual meeting. The corresponding secretary was authorized to have the usual notices announcing the annual meeting printed and to issue the same. Dr. Tucker announced that the faculty of the college would provide a collation for the meeting, and the offer of the faculty, on motion, was accepted.

The treasurer, Dr. T. F. C. Van Allen, presented his report for the year, as follows:

Report of the Treasurer.

Cr.		
Balance on hand April 20th, 1897		$124 94
Dues paid April 20th, 1897		135 00
Dues received from April 20th, 1897, to April 20th, 1898		18 00
Interest on deposit at bank		6 46
		$284 40
Dr.		
Various bills paid from April 20th, 1897 to April 20th, 1898, for which vouchers are presented		104 73
Cr.	$284 40	
Dr.	104 73	
Balance		$179 67

The account of the "Building Fund" of the Alumni Association: April 21st, 1897, there was deposited at the National Savings Bank of Albany $50.00, with interest reckoned Jan. 1st, 1898, $1.33, making $51.33. This account is entirely separate from that of the regular account of the association.

The financial condition of the association is better than ever before.

Attention of the association is called to a suit against the association for a debt contracted by the former publisher of the Albany Medical Annals, a year or more previous to the advent of the present management. This debt is due an agent who secured advertising matter for the Annals. While not questioning the probable justice of the debt the executive committee does not regard the association as liable, inasmuch as the association has never shared in any of the profits that may have accrued through the publishing of the Annals, neither has it ever been asked to meet any of the obligations. It is recommended that a motion be passed by the association disclaiming any financial responsibility for the Albany Medical Annals. The present suit against the association if successful, would wipe out a large portion of our present surplus.

[Signed.] T. F. C. Van Allen,
Treasurer.

On motion, the report of the treasurer was referred to a committee consisting of Drs. C. F. Clowe, H. Lilienthal and W. J. Wansboro, who examined the same, compared the disbursements with the accompanying vouchers, and subsequently reported it correct. On motion, the report of the committee was received and the committee discharged, and the report of the treasurer accepted and ordered placed on file.

The President's address being the next order of business, Vice-President Cutter was called to the chair, and President Maben delivered the following address:

PRESIDENT MABEN'S ADDRESS.

Gentlemen of the Alumni Association:

Twenty-five years ago a few of the graduates of the Albany Medical College met here in this building and organized the Alumni Association which we to-day commemorate. I am pleased to say that I was one of that number (a charter member, so to speak) and have ever since been devoted to its interests, its welfare, aiding and giving my influence to make the association successful and pleasing to all who came back to the reception, the banquet and re-union of the classmates of our boyhood, the home of our *alma mater.* The committee of arrangements have always made us welcome and often given us a grand reception, a fine collation, viands rich and rare, nicely served at the old Delavan. We were many times highly entertained, with music, song and speech, and all went merrily on till past the midnight hour. When the treasury has been low, funds exhausted and the association in debt, the faculty have generously made up and paid the deficiency till the burden became too heavy to bear. To-day they are to give us a plain, substantial luncheon, and to serve it in the old college building with which we are all familiar and where we are all at home, and can enjoy the repast side by side in social converse, face to face; far more pleasing than in some unknown banquet hall, listening to set speeches from speakers we never heard before, or would care to hear again.

Our association is in a prosperous condition, and a larger membership and a greater surplus in the treasury than ever before. I am happy to see so many present, and I know that you will feel well repaid for coming You have been made welcome in behalf of the faculty in a most pleasing manner, which makes us all feel a brotherly love, a unison of heart, a sort of family tie that seems to bind us together stronger and stronger as we meet one year after another.

Previous to the formation of the association, the faculty, each in turn, would entertain the graduating class and their friends at their respective homes. I well remember after the commencement exercises were over, we were given a grand reception by Doctors Armsby, Quackenbush and others at various times and places. The old faculty were generous almost to a fault, seemingly could not do too much for the students and their friends. They were a noble body of men, each differing from the other in manner and traits of character.

DR. ALDEN MARCH was a man of noble physique, quick and powerful, stern and unyielding, uncompromising, but kind-hearted withal. In the lecture-room order and attention was the law and could not be broken.

He was master of the situation everywhere; no student would dare, or care, to incur his displeasure. He was a practical teacher, his only manuscript the morbid specimen, the clinical subject. He was a bold and fearless operator. In surgery he had no superior and few equals.

Dr. Thomas Hun was a deep thinker, prepared his lectures with the greatest care and delivered them in a plain conversational manner. In diseases of the chest and nervous system he was an authority not excelled, and even now, only equalled by one other, his son, who is following so closely the example of his father in the practice of medicine, and teaching in the same institution where his father taught before him.

Amos Dean was an able jurist, a fluent speaker, a great delineator of stories, a practical joker and a royal, jolly good fellow.

Dr. Charles H. Porter was a brilliant young man, just giving his first course of lectures in chemistry. He was popular with the students, an excellent instructor and is now the only one living.

Dr. Howard Townsend was a learned man, a magnificent scholar, sound in rhetoric, correct in pronunciation, profound in his teaching and an accomplished gentleman.

Dr. John V. Quackenbush was a gentleman in every sense of the word, a leading politician in the affairs of the city and State, a shining light in the medical profession, a star of the greatest magnitude in the dark days of gynecology and midwifery. He, of all others, perhaps, as a lecturer was more earnest in his work, more forcible in his language, and left a lasting impression that can never be forgotten. These words are still ringing in my ears: " Reproduction is God's own work; do not hastily interfere, watch, wait and nature will do everything, the child will be born and the mother will thank Heaven for her delivery."

Dr. James H. Armsby was a gentleman of culture and refinement, charming in manner, exquisite in taste, faultless in dress, choice in language, poetic in speech, master of his subject, " a teacher and lecturer unsurpassed," ranking as surgeon with the highest at home and abroad.

Dr. James McNaughton (as his name implies) was a typical Scotchman, gigantic in form, stately in bearing, striking in appearance, skin clear as marble, cheeks rosy as the maiden, with long, snowy white hair, gracefully receding from the high forehead of his massive brain. He was commanding and erect as a Spartan soldier, fair and beautiful to look upon, he was a grand old man, " the noblest Roman of them all."

" The lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Foot-prints on the sands of time."

The teaching of the old faculty and the teaching of the new have greatly changed. We were taught the depleting practice, blister, bleed, purge, salivate, starve; to-day, directly opposite; sustain, stimulate, strengthen, feed, nourish. In surgery, the silk thread, adhesive plaster and water dressing; to-day, the wire, cat-gut, silk worm ligature and dry antiseptic powder. In obstetrics, we were shown a few crude instruments and told not to use them. but watch, wait, and nature would do everything; to-day, we are taught to apply the forceps and deliver as soon as possible without injury to the mother or child, if there appears any unnecessary delay.

During my long career I have practiced the two extremes, and have seen good and bad results from both. My own experience, however, makes me less confident in either, and more conservative; giving less medicine, looking after the sanitary surroundings and the antiseptic condition of the patient in the sick room.

In regard to surgery my practice has varied according to time, place and circumstances. My first experience worthy of mention was during the contest between the North and South — the Rebellion — the War for the Union. I was delegate to the American Medical Association, which was being held in the City of New York. An earnest appeal was made from the platform by Surgeon McDougal for help, for volunteer surgeons to go to DeCamp General Hospital, David's Island, New York Harbor, where hundreds were suffering and dying for the want of medical attention. We were invited to go in a body to visit the camp. The association adjourned and accepted the invitation. We were taken on board of the Government transport, Thomas P. Way, which was anchored on the East River side. It was a perfect day, the air soft and balmy, water clear as crystal, one grand ocean mirror, reflecting the beauty of the shipping and the magnificent scenery all along the sea side of our onward course. Flags were gently and mournfully waving at half-mast in honor of the dead and fallen of the recent hard-fought battles. Soldiers were drilling, bands playing and martial music resounding all along the shores of every recruiting station. In the harbor were ocean steamers, government barges, crafts of every description, laden with implements of war, forage and army supplies.

We reached the camp about noon time; it was a beautiful spot; the grounds were laid out in plats of green and flowers, graveled walks and roadways, magnificent buildings, hospital and pavilion, complete in every respect, tents in great number; headquarters for officers and surgeons all that could be desired; good accommodations for over four thousand patients. I was pleased with the situation, accepted the call, remained and was ordered to report for duty next morning; I was assigned a pavilion, private room, ward master, good assistants, competent nurses and surgical and medical supplies of every description. I was given two hundred beds to look after, the usual number allotted to each surgeon, including pavilion and tents. During the night a large transport came in with over thirteen hundred sick and wounded. The vessel was filled from top to bottom, with white and black, gray and blue, captor and captive — all on one common level from the seat of conflict, the open fields, the burning forests and the watery trenches. The scene was appalling in the extreme. The deck was strewn with sick, dead and dying, bleeding wounds from saber, shot and shell, sloughing ulcers, angry sores, from burns and bruises, with the maggot worm crawling, biting, gnawing sweet life away in painful agony. Then thought I: " Never, never, saw I human misery before."

It was early morning when the task began of separating sick and wounded and removing them from boat to beds in wards and cots in tents. The day was hot and sultry, the bugle sounded the surgeon's call; I quickly responded and was soon at work. Chief Commanding Surgeon Webster examined the cases, indicated by chalk mark where the cuts should be; directing all amputations to be made circular and left open. Poor, unfortunate soldiers, one after another in quick succession were prepared, ether given, tourniquet applied, and placed upon my operating table with two expert under-graduates to tie the bleeding vessels and apply the dressings. In this way the work went on all day long, cutting and sawing, sawing and cutting, removing hands and feet, arms and legs, a number incredible to mention. This was my initiation day; afterwards all operations were left to my own judgment and discretion, unless I chose to consult others. Similar day's experience were common for months, as one transport came in after another with sick and wounded from the bloody field of carnage.

Nearly all gun-shot wounds were left open, the same as amputations, to heal by slow granulation. This was done to prevent gangrene and death. In the majority of cases the water dressing was used and scraped lint applied. The antiseptic treatment was comparatively unknown. A large per cent., however, recovered.

In private practice I have always closed the flap in amputations, sometimes using the water dressing, but later used the dry antiseptic powder, which is far more satisfactory. In fractures, I have used all kinds of appliances, but have found nothing so good as the old Day extension splint for the treatment of fractures in the thigh bone. I have successfully used it in thirty-three cases without any apparent shortening.

In obstetrics, I have practiced both the waiting for nature to do everything, and the quick delivery by using the forceps. For many years I followed closely the instruction of Prof. Quackenbush, watching, waiting and delivering nearly two thousand infants without using the forceps, or having counsel or help from any other physician. Forms of all sorts and sizes, from midgets to monstrosities; presentations of every description, from normal to *placenta prævia,* always delivering and saving the mother and in no single instance did death occur.

After taking a post-graduate course in gynecology and obstetrics, I have since practiced the more modern method of using the forceps and quick delivery, closing up the lacerations whenever they occurred.

This is a progressive age. Forty years have completely revolutionized the theory and practice of medicine and surgery, and changed the whole curriculum of our medical schools. The advancement in the science of medicine is wonderful, the progress in surgery is great, and, I am proud to say, that the Albany Medical College is second to none, and up-to-date in every respect. True, her founders are all dead, all the members of the faculty of '57 are gone, but the old homestead is here, the old College building is here and is filled with an able corps of instructors and a large number of students, and is in a prosperous condition, even more so than in the days of March, McNaughton, Armsby, Hun and others, all of whom we kindly remember and greatly reverence. She has her four-year course, she has her Bender Laboratory, she has the old hospital and funds for the new. She also has the nucleus for a new and grander college building. Why is this? It has become necessary from the growth of the institution, which is largely due to the influence of Doctor Raymond, President of Union University, and Doctor Vander Veer, Dean of the Medical Faculty, and the publishing of the ALBANY MEDICAL ANNALS. All of the officers, trustees, professors, and many of the graduates are working in harmony to accomplish this great undertaking, and, I trust, before the closing of the year the money will be raised, the site secured and the corner stone laid. Let every member of the Alumni Association respond, use his influence and give his mite in proportion to his wealth. The Medical Faculty are all worthy and able teachers; drawing unto them a larger number of students than can well be accommodated.

The chief surgeon has become famous. He may not wield the long catlin of March, or the broad scalpel of Armsby, but he cuts deeper and does finer work. He safely and boldly opens into the abdominal cavity, removes tumors, stone from the bladder, ties the appendix, takes out the uterus and ovaries with a grace and ease that would astonish and mystify his predecessors were they to come back to earth again or look down from their Heavenly abode. We hear of his fame, his skill, his many capital operations, all throughout the Mohawk valley, all along the Hudson. Yes, from the Catskill mountains to the far-off hills of Berkshire, from the plains of Schoharie to the highlands of the Adirondacks. From the city of his home for hundreds of miles around, the name of Dr. Vander Veer, the chief surgeon of our *alma mater* (like the lamented March and Armsby) has become the household word of the whole surrounding country.

To the graduating class of '98 I can only say, that I am pleased to meet you, to greet you and congratulate you, one and all, for having passed the final examination, the great ordeal of worry and anxiety, and now only wait the hour for the awarding of your diplomas, which gives you the honored degree of Doctor of Medicine, elevating you to the high standard of our noble profession, a degree of which you may well feel proud, conferred by the time-honored institution of the old Albany Medical College, the Medical Department of Union University. In receiving your parchment, I hope that you have all had the good sense to have your diplomas written in plain English, so each can read his own, which you cannot if written in Latin unless you have previously taken a classical course in some higher institution of learning. Those of you who may have a Latin diploma will find it very embarrassing at times to try and make its meaning known and translation clear to others. I once knew a physician who was summoned as an expert witness at a coroner's inquest. He was required to produce his diploma which he did, and also asked to read and translate it which he failed to do. It was passed from foreman to jury and neither could comprehend or understand it. The Doctor was called down and declared an incompetent witness and lost his ten dollar fee.

This day, of all others the proudest of a life-time, you will never forget; the words of your Valedictorian will impress upon you the recollections of your teachers and class-mates. The scenes of your graduation you will remember until the day of your death. The viands of your class supper you will relish with a hunger and thirst that will fill you full to overflowing.

Pardon me for the apparent digression and statement I am about to make. I am prompted to do so from the vivid recollections of my own graduation. It was the happiest day of all my life, made doubly so by the presentation of an elegant gold watch from a gentleman comparatively a stranger to me. While passing down the aisle with parchment in hand after the exercises were over, he placed his hand upon my shoulder and said: " I see you have your diploma, your license to usher the unborn into the world and doctor them out; " at the same moment handing me this beautiful watch, saying, " You will need a good timepiece to count the pulse of your patients while living and to tick them out of the world when dying. Accept this," said he, " as a token of respect and for acts of kindness to my little daughter during her long sickness, far from home, staying at the same place where you were living." I did most thankfully receive the watch and accept the golden gift, and have carried it for nearly half a century, using it for the purpose mentioned when presented. Indeed, it has ticked away many long and wearisome hours while watching and waiting the coming of the new-born child, to the number of over twenty-six hundred. The thousands of whose pulses I have counted while living and the hundreds it has ticked out of the world when dying I cannot tell. It is enough to say, however, that while the noble heart of the generous giver has ceased to beat, and the pulses of so many others have come and gone and stopped, the watch is still running, beating, ticking; true to the minute as the sun itself. Its face and hands remain unchanged while my face has grown old and care-worn, and my hands have grown weak and tremulous with the lapse of time. I was pleased when I received it, I am proud of it now, I shall keep and carry it as long as I live as a token and twin mate of my diploma, in memory of my graduating day.

The young physician, first of all, should make himself pleasing and presentable to gain the confidence of his patients and patrons. There is much in touch and tact and the manner of getting in and out of the sick room, so as to make a favorable impression. Little deeds of kindness, sympathetic words softly spoken at the proper time in the right place, are always appreciated by the patient, the relatives and neighboring friends. Be kind and sympathetic in the dying hour, when your skill is exhausted and the patient is sinking and death seems inevitable. Be true men, good to yourself, loyal to your profession, prompt in action, and success will crown your efforts. Keep your good name. It is better than riches. Keep your brain clear and hand steady while handling poisonous drugs and sharp knives. Keep under the shadow and influence of the institution that sends you forth to practice medicine and surgery. Come back to the alumni meetings whenever it is possible for you to do so. Keep close to the bosom of your Foster Mother — the Albany Medical College — your *Alma Mater.*

The members of the class of '98 were present in a body, and rose as the President addressed them at the conclusion of his address, and received them into membership in the association.

Dr. F. A. Palmer moved a vote of thanks to the President for his interesting address, a copy of which he was requested to furnish for publication. Vice-President Cutter put the motion to a vote and declared it unanimously carried.

President Maben then resumed the chair.

In the unavoidable absence of the historian, Dr. Charles E. Davis, his report was read by the recording secretary, as follows:

REPORT OF HISTORIAN, DR. CHARLES E. DAVIS.

Mr. President and Fellow Members of the Association:

I have the honor to state that reports from the Classes of 1848 and 1868 are made by the historian; 1858, by Dr. Geo. W. Draper; 1878, by Dr. Wm. O. Stillman, and 1888, by Dr. Robert F. Macfarlane.

Half a century has passed since the class of 1848 graduated from this college. It is a sad but very impressive fact that out of the whole membership of the class (21) only one responds to the roll-call. Eleven are known to have died and nine addresses are unknown. During the last ten years the following members of the class have died:

Drs. S. H. Kelley, T. S. Dawes, J. S. Dolson, A. W. Holden and F. G. Mosher.

Dr. Jonathan Nichols writes from Atlantic, Iowa: I have now practiced fifty years — one year at Troy, N. Y., seven years in my native town, Charlton, Mass., thirteen years in Wisconsin, and twenty-eight in Atlantic, Iowa, a good town of five thousand inhabitants. I have had fair success from the beginning; have always lived well and enjoyed life. I have been very happy in my family relations; have an abundant competence and vigorous health. I am full of pleasant reminiscences of the old faculty. I especially admired Professor Hun who was my preceptor for two years at his office on Maiden lane. I shall be pleased to receive any of the alumni at my home in Atlantic.

With best wishes. Truly,

JONATHAN NICHOLS, M. D.

The recording secretary read the report of Dr. G. W. Draper, class historian for '58, preceded by the following poem, prepared by Dr. Draper:

OUR ALMA MATER'S CALL.

HARVEST HOME.

Ye loyal sons of '58 who breathe the vital air
Retrace your wandering steps once more and seek your Mother's Chair.

She sits enthroned at Albany, where she will ever reign
And calls her sons with earnest voice, from mountain, hill and plain.

Since forty years have glided by, you've wandered far and wide,
Some have sailed a tranquil stream and some a stormy tide.

The noble men who taught us here have reached their Heavenly rest,
The laurel wreaths are on their brow, *our love wreaths* on their breast.

This is our Harvest Home to-day, Her children here shall meet
And bring their garnered sheaves along, and lay them at Her feet.

The living ones who cannot come, will be in spirit here
And join the spirits hovering round, fresh from the upper sphere.

Bring all the good deeds you have done, in mercy and in love,
These treasures will your Mother take and lay them up above.

These men have rode full many a mile to help a brother man,
When not a glimmering hope of *pay* the pitying eye could scan.

Unnumbered times our time and skill to suffering ones are given,
When all the checks that we receive are on the Banks of Heaven.

Where are the Good Samaritans, along life's rugged way,
If not the whole-souled men like these who gather here to-day.

Our mother smiles with joy and pride at the good deeds they have done,
And gives her Benediction to every worthy son. G. W. D.

REPORT OF THE CLASS OF '58. DR. G. W. DRAPER.

Mr. President and Fellow Alumni:

The task allotted to me as historian of the Class of '58 has been a pleasant one, and — though tinged with sadness — deeply interesting. No tale of fiction can stir our souls like the story of real life as told by some of our classmates.

Forty years ago our class — fifty-five in number — marched forth to medical service on the battle-field of life to overcome disease and its causes. In surveying that field to-day we find that sixteen have died — but their souls are "marching on" — twenty-one are missing or their whereabouts unknown. How many of these are living we have no means of knowing. Nineteen were reported living, but one of these — Dr. E. C. Bowen — has recently died, leaving eighteen survivors, representing an aggregate of over 700 years of experience since graduation.

The first reply received was in regard to Dr. Bowen from his son, who lives at E. Cleveland, Ohio, announcing his father's death. Dr. Bowen was a room-mate of mine and a good friend. He came from the sunny south and carried sunshine with him. He was one of nature's noblemen. His son's letter confirms our early impressions. He writes of his father, "I know if he were living it would have given him great pleasure to meet his old associates, as he was of a very social disposition and loyal to old friends. At the time of his death he had not been in active practice for about eight years. We lived south during the late civil war and he had charge of a hospital. After the war we moved to Boston where he practiced for several years. In his profession he was like Cæsar's wife, "above suspicion." He was always ready to answer any call, night or day, regardless whether he would get anything for it or not. As a man he was upright and honest. As a friend loyal to the death. As a husband and father, all that anyone could wish. His mind was clear up to the time of his death, when he told his friends, "Don't worry about me. I am passing through the narrow straits all right."

The record of Dr. Washington Akin, of Troy, N. Y., shows forty years full of honors and responsibilities. He writes: After graduating in class of '58 I located in the city of Troy, N. Y. In a little over a year I was appointed city physician, then attending physician and surgeon at the Troy Sisters' Hospital, which position I held until the breaking out of the war, when I was appointed by Gov. Morgan assistant surgeon of the 125th N. Y. Vols. Our regiment was ordered to Martinsburg, Va., and soon marched to Harper's Ferry. Next day, with 10,000 other troops, we were gobbled up by Gen. Jackson. After parole we marched to Annapolis and took transportation to Chicago, where we remained until exchanged. We returned to Virginia at a place called Centerville; from there to the field of Gettysburg and took part in the great battle. I was with the regiment at the battles of the Wilderness, Spottsylvania, North

Anna, Cold Harbor, Deep Bottom, at siege of Petersburg, engaged at Ream's Station on Weldon R. R. and Hatcher's Run, and was present when Gen. Lee surrendered to Gen. Grant at Appomattox. In the fall of 1865 I married the daughter of Dr. Wesley Blaisdell, of Coeymans, N. Y., who was a contract surgeon in the army and died in the service, of yellow fever. We have had one son and two daughters. I have been jail physician one term and police surgeon for twelve years, examining surgeon of pensions thirteen years and at present one of the board. Am one of the attending physicians of Marshall Infirmary and one of the governors. Am member of County Society and have been its secretary and president. I am a member of the Troy Scientific Association and American Medical Association. I am in active practice, and, on the 22d of August next, will be sixty-three years of age.

Dr. Elias B. Boyce writes: After graduation I returned to West Sandlake, N. Y., where I had spent my student life, and entered into partnership with my brother and preceptor, Dr. Arlington Boyce. Continued said partnership until December, 1861, when my brother retired on account of ill health and left the work in my hands. The practice was a lucrative one and at times laborious. In March, 1866, my system being exhausted from hard work and exposure, and having several typhoid cases on hand, I contracted the disease, which left me with my splendid constitution shattered. Lung trouble followed and my consulting physician advised me to arrange my affairs and get ready to die. But during the next summer I regained strength so as to be able to do a limited amount of work. In 1867 I removed with my family to Columbia county, spending most of my time in traveling until 1872. Having regained my health I removed to Averill Park, N. Y., where I have enjoyed a lucrative practice. During the last two years have served as supervisor of the town. The practice of my profession has always been a pleasure and have never regretted choosing it for my life work. I was married in 1860 to Harriet C. Nichols, of Northville, Fulton Co., N. Y. We have had one child, a son, born in 1862 and died in 1881.

Dr. Charles E. Smith, of Whitesboro, N. Y., evidently landed at once in the right haven where he has held the fort in peace and prosperity ever since. He writes as follows:

After graduating in '58 I began practice in Whitesboro, N. Y., and have continued it actively up to the present time. Am pleased to say that I early secured a liberal amount of patronage, which increased with my experience. Although not eventful, my life has been a very busy one. On the establishment of the board of health of Whitestown was elected health officer and have held the office for twelve consecutive years. I have served as president of Oneida County Medical Society and am at present its delegate to the N. Y. State Medical Society. I was physician to the Masonic Home and School at Utica, N. Y., since its opening in 1886, and have been consulting physician to St. Luke's Hospital, Utica.

I am a Republican and have taken an active part in the politics of this county. Have served as post-master for Whitestown for about twenty years.

A letter from Dr. J. K. Haynes, of Hoosick, N. Y., calls forth our sympathy. Here is a brother doctor whose ambitions have been thwarted and his activities hampered by disease. With trembling hand he thus writes:

Dear Doctor. — Your kind letter is at hand. Should have answered before but my condition must be my excuse. After graduation began practice at Hoosick Falls. Stayed there four years then moved to Hoosick where I now am. Have not practiced since March, 1883. Was then taken with bronchial and lung affection. No one expected me to live any length of time. In about six weeks was able to sit up and walk a little, but was left with asthma. For five years I suffered much and tried many remedies with no permanent relief. Went to Florida winters when I could. For the last ten years have been some better, but several days to a week at a time the most I can do is to try hard to breathe. Have no one but myself to care for. That is enough. My wife died nine years ago and I have no children. My lot has not been an enviable one, but I do not complain. I cannot boast of success won or great deeds done. I thank you for your kind letter. It is the only one I have received from the class. Would like to be with you at the meeting but cannot. This scribbling is tedious and tiresome. Hope you will have a good time and enjoy it.

The next report comes from Dr. Chas. Hutchinson, of Portland, Maine.

After becoming an M. D. he contracted with an able physician in Cape Elizabeth to assist him for one year. Salary small but chance for improvement excellent. In 1859 he located in Waterford, Me., and secured a large practice. After three years joined the army as assistant surgeon. " In three months my health broke down and I returned to Maine. After recovering health commenced practice in Gray, Me., and remained in active practice for nine years. I then removed to Portland where I am still living. I have a pleasant home in the best part of the city and practice ample for my support. I expect to spend the remainder of my days here. While living in Gray I married an estimable lady who has contributed much to my happiness and prosperity. Have had two children, a daughter and son. I have never sought political or other distinction for fame. Have been president of county medical society, Portland Medical Club and Practitioners' Club. I have always had an affectionate remembrance of Albany Medical College and of the sterling men who were its professors at the time of our graduation.

Dr. D. U. Caughell, of Morrison, Mo., gives an account of his experience which is certainly not devoid of romance and pathos. He says: " Agreeably to your request, I will give you a brief sketch of my life. I lay no claim to literary ability but will give it in a few words as best

I can. I was born in Canada in 1835. Lived the life usual to country boys of that time — farming, logging, going to school and an occasional trip as a sailor on Lake Erie — until 1855. I then took a course of lectures in the University of Michigan. Matriculated as a homœopathic, but a few days' instruction, division and trituration combined with the "Spiritual Effects" of drugs soon convinced me that it was not practical. As a result I turned my attention to the study of medicine. Next year took a course in the Buffalo Medical College. In 1857 came to Albany Medical College, graduating in March, 1858. After leaving college went to Chicago with a view of locating there. I fell in with a doctor by the name of White who made a proposition to me to buy cattle and drive them across the country to California. Thinking the scheme a good one, advanced him all the money I had to purchase the stock and I came ahead to find a place to winter them. That was the last I ever saw of White, stock or money. That experience left me penniless in a strange and undeveloped country. While tramping through the woods a few days after, realizing that all was lost, I sat on a log to think the matter over. I had just paid a farmer's wife my last fifty cents for supper, bed and breakfast, and to say that I was in the very bottom of the slough of despondency but expresses it mildly. I concluded to seek manual labor when I noticed a man riding towards me, evidently a farmer. He spoke to me and engaged me in conversation. I explained my condition to him and it ended by his inviting me to stay all night. The invitation was gladly accepted. The next morning he proposed to stock me with drugs, horse, saddle and bridle, if I would stay and practice medicine. I accepted the offer and soon had all the work I could do. For the succeeding twenty-five years I was riding all the time, making money fast, only to loose it again by bad investments, securities, etc. I was married in 1860. My family consisted of three boys and one daughter. Fifteen years ago my health began to fail. I traveled considerably in search of health without benefit. I then returned to make my home with my son, Dr. F. H. Caughell. He found that I had diabetes. You will know by that that my days of usefulness are past. There is one strange feature of my case that may interest the profession, and that is that I do better and actually thrive on starch foods. If I confine myself to the nitrogen class of foods I decline. I have been a Democrat in politics, but never sought an office or held one in my life. Joined the Masons in 1860 and am still a member in good standing.

Dr. J. W. Cobb, of Binghamton, N. Y., writes: After receiving the degree of Doctor of Medicine from the Albany Medical College, I located at Montrose, Penn., in 1859, for the practice of medicine, where I remained until the summer of 1862. There being a call for assistant surgeons for the United States army during the Rebellion, after my examination by the faculty of the University of Pennsylvania, I was appointed assistant surgeon of the 134th Pennsylvania Volunteers, Col. Matthew S.

Quay's regiment. Prior to my being mustered into the United States service, I was examining surgeon at Camp Curtin, Penn., for a time. At the expiration of my term of service, I returned to Montrose, Pennsylvania, and resumed my former practice, where I remained until 1873, when I removed to Scranton, Penn. I practiced medicine in that city until 1877, when, becoming dissatisfied with the mining regions as a place of residence, I moved to Binghamton, New York, where I am now located, and where I have been practicing ever since.

I have at present associated with me my son, J. Hunting Cobb, who is also a graduate of the Albany Medical College, of the class of '91. I am in the enjoyment of good health and have an excellent business, and while I am about three score, I feel that I am sixty years young, and satisfied with life in general, and trust such is the experience of all of the class of '58 of the A. M. C.

Dr. C. H. Hammond, of Worcester, Mass., writes from Los Angeles, Cal.: After leaving college I located at Pascoag, R. I. Here I found not only practice but a loving wife who has, for thirty-eight years, been my companion and helpmeet. She was taken home February 4th, 1897. After remaining here two years I located in Oakham, Worcester Co., Mass. Five years of my life were spent here, then for three years was in West Boylston, Mass. Since then, for twenty-eight years, have been in Worcester, Mass. During this time my health has been poor — at times very sick — so that many times have had to get away from my work months together, consequently have not been able to push my work as many others have done. With all this have succeeded in building up a practice of which I am not ashamed. Am member of the Mass. Medical Society, Worcester Medical Association; have been city physician of Worcester. Since fifteen years of age have been interested in church and Sunday-school work. For twenty-eight years have been connected with the First, or Old South, Church of Worcester. Have been blest with two children.

I have been hoping to receive a report from Dr. Geo. W. Little, of Glens Falls, N. Y. His partner, Dr. C. A. Horton, wrote me that Dr. Little left on October 11th for a winter trip and would not return before the 18th of April.

I expected a report from Dr. J. A. Follett, of Boston, Mass., for he writes that "your kind invitation is received. I shall be pleased to grant your request. Do not infer from the heading that I have deserted my profession. I am still an 'M. D.' and not a dentist." (The heading referred to makes him Dean of the Boston Dental College.)

Dr. A. W. Goodale, of Watertown, N. Y., writes: I graduated at Albany Medical College in June, 1858, and practiced in Jefferson Co. until April, 1863, when I accepted a commission as assistant surgeon in 10th N. Y. Heavy Artillery and served with them until close of war and mustered out and discharged with regiment at Sacketts Harbor July, 1865. I resumed practice in Watertown, but in 1868 I accepted a position in medical department of Phœnix Mutual Life Ins. Co. of Hartford, Conn., and lived in Hartford about fifteen years, then went to N. Y. City for the same company, and, in 1868, resigned and came back to Watertown to live. I have been reasonably successful as a physician and have laid up enough to give me good support, I trust, while I have to live. I am not doing anything at practicing medicine, but am member of Jefferson Medical Society and examiner for insurance companies. I am the secretary of thousand Island Park Association and one of its directors.

I was born in 1832, near Syracuse, N. Y. Spent my boyhood on a farm — nature's best gymnasium. Winters in district school, classical school, teaching a few winters, a course at Michigan University and then at Albany. After graduation, with Greeley's advice, went west and located in Illinois. Remained two years, then spent a winter and spring visiting hospitals, dispensaries, etc., in N. Y. City. The time was full of instruction and enjoyment. Returning to Central New York, located at Euclid. Soon after married a former schoolmate, a graduate of Cazenovia Seminary. We have two daughters and one son. At Euclid had an extensive practice for eight years for which my good health and constitution prepared me. In 1869 removed to Syracuse, N. Y., where I have continued in practice ever since, except three years which, with my family, I spent in Colorado.

Financially I succeeded in gaining a snug little fortune, but, a few years ago, lost the bulk of it by investments and business relations. We still enjoy the comforts of life, if not the "luxuries that enervate." My family circle is still unbroken and my spirit also, although "La Grippe" has tried his hand on me of late. There is much of interest and enjoyment in this age of rapid progress.

What a diversity of experience by different members of our class! although working on the same line. Things that seem like chance, are they not a part of the order and variety in nature?

"These struggling tides of life that seem
In wayward, aimless course to tend
Are eddies of the mighty stream
That rolls to its appointed end."

Which we hope is for the good of all of us.

GEO. W. DRAPER,
Historian of Class of '58.

The recording secretary then presented the report of the class of '68, prepared by Dr. Davis:

REPORT OF THE CLASS OF '68.

The number of graduates of this class was thirty-five; number not heard from, twenty-one. The following have died: Drs. Orson F. Cobb, Henry D. Losee, John A. Wilber and John F. Crounse. The addresses unknown are those of Drs. Henry W. Allen, John A. Frisbee, Adam Mackie, Jr., and Edward Thompson. Interesting letters have been received and tell of trials and successes, but all speak with the greatest regard and admiration of their *alma mater*.

Dr. J. M. Shields writes: What a great pleasure it would be to me to attend the meeting. I send greeting and well wishes. My practice is not very remunerative, but I am having fair success and we have a pleasant home here. (Jemes Springs, New Mexico.) The Springs are noted for the treatment of rheumatism and syphilis, and are certainly effective for these diseases.

Dr. Lorenzo Hale states that after graduation in '68, he did not open an office for practice until 1870. Since then he has been constantly in practice, and has always resided in Albany. He sends the following letter:

Looking backward from 1898 to 1868 we see that the general cosmos of science and art in medicine and surgery, as in other lines of knowledge, has been transformed. Men of thirty years ago never dreamed that their immediate successors would attain such high ground of information in medicine and surgery as the world possesses to-day.

A more radical transformation, however, has taken place, in the same time, in the personnel of our college faculty. The reminiscences by the men of '68, of the instructors of their class, brings to mind a body of energetic and brainy men. But the review is a glance at necrology. For not one remains. They are all dead. Yet their names are still spoken with kindliness and respect. We open the roll of the dead. And we love to recall each one. The gentle and lovable Howard Townsend, professor of materia medica and of physiology, was the first one of our faculty to be taken from us. He died January, 1867, aged 44. It was he who showed us a clinical thermometer, as a novelty. He spoke of bromide of potassium, that might occasionally be used to prepare the way for the selection of older remedies which were better. Chloral was not heard of by Professor Townsend, nor by the class of '68 before graduation.

The second death in our faculty occurred after our graduation. James E. Pomfret died February 22, 1869, aged 43. After the death of Prof. Howard Townsend, his department in the college was divided into the chair of physiology under Prof. James E. Pomfret, and the chair of materia medica under Prof. John V. Lansing. Prof. Pomfret, with his clear sentences, every word carefully weighed and slowly uttered, and reinforced by frequent quizzes, was a most successful teacher. It was he who used to bring a valuable miscroscope (not a common thing in those days) to the amphitheater for our benefit. Dr. Pomfret belonged only to our class of '68. His signature appears on our diplomas only. His only course of lectures was to us, the graduating class. He became the father-in-law of one of our class. His office was opposite the college.

Dr. Pomfret had a history. Born in England, he came to America in boyhood. Although educated an Episcopalian, he rejected the dogma of "eternal life in torment," and came to hold the opposite extreme, and became a Universalist pastor. During his pastoral work he prepared himself for medicine, and later attended and graduated at our A. M. C. in '59. He was partner with Prof. Armsby until '62, when he entered the army and became surgeon-in-chief, 1st Division, 2nd Army Corps. He was an intimate friend of Gov. Fenton, and after the war was surgeon-general on his staff. I have a great desire to quote from his words, which were especially directed to us, the class of '68, at the opening of our final college session:

"What better opportunity can be had for personal culture than our profession affords? Looked at from its scientific side, the ample room afforded for accuracy of observation, for subtilty of analysis, for comprehension of law, for delicacy of manipulation, insures to the earnest student the fullest culture of every power of the mind. Looked at on the side of art, its influence on the individual is equally potent. Brought constantly face to face with the gravest responsibility, called to meet the most sudden emergencies, there is inevitably produced in him a thorough self-possession, a quickness of apprehension and a facility of resource compatible only with the most perfect culture."

The third member of our faculty to disappear from the public eye was the celebrated and venerable Alden March. He was for years the most prominent surgeon in this part of the State, and was a most important factor in the organization and character of the A. M. C. But he did not know of antiseptics. If his cases suppurated "it was not his fault." He died June 17, 1869, aged 74. The last class to bear away his signature on their diplomas was our class of '68. Dr. March was proud that he could write his name with sharp, clear strokes, and put to blush the shaky hand of young men.

James McNaughton died June 11, 1874, in his 78th year. He used to tell us about Cullen's synocha and synochus. Tall and commanding in form, positive and clear in his speech, he was a prominent and influential figure in all the walks of life. Yet he ridiculed the idea "that the liver is a sugar factory."

The suave James Armsby died December 2, 1875, aged 65. He was a natural orator. At certain of his lectures, which were often given in the evening and to which the public were invited, he would hold a miscellaneous audience spell-bound by his eloquence on such topics as hernia, the eye, or the ear, the human hand, the foot. He used to describe the prostate gland as "resembling that *familiar* object, a horsechestnut." The trees having, for prudential reasons, been removed from the college yard, the horsechestnut is not as familiar in our amphitheater now, as in Dr. Armsby's day. Dr. Armsby's monument in Washington Park, testifies to the esteem in which he was held by Albanians.

The witty J. V. P. Quackenbush was our professor of obstetrics; and was a mayor of Albany. The mayor followed the majority June 8, 1876, aged 57. His death removed the last of the pioneer faculty of the A. M. C., with the exception of Thomas Hun, who still survived for twenty years. Every year, after the triangle had sounded the close of the hour for the closing lecture of his course, Dr. Quackenbush would close his remarks by making the remark, "Make your mark" — and rehearse the well known verses.

Edward R. Hun had a share in moulding the class of '68 with his practical demonstrations in physiology. It was he who interested us in the sphygmograph. His death in his 38th year, March 4, 1880, early in a life of rare promise, was a grief to all.

Soon after, on April 1, 1880, the brilliant Charles A. Robertson, aged 51, eye specialist, died after a lingering illness. With a scrupulous sense of maintaining right, "he dipped his pen in caustic."

That same year Albanians were shocked by the drowning, at Dannemora, May 9, 1880, of John V. Lansing, aged 56. In 1867 he was our professor of materia medica, succeeding Prof. Howard Townsend in that branch. He filled this chair until 1870; then for three years that of physiology and clinical medicine; then for three years that of principles and practice. His manner was quiet but jovial and sincere. Every student felt that he was interested in him.

Henry R. Haskins was our demonstrator, and from 1869 to 1876 was professor of anatomy. He was a graduate of A. M. C. '61, and was assistant surgeon 192nd N. Y. S. V. He died at the early age of 48, March 31, 1883. Classmates remember his sunny cheerfulness and his kind ways.

Jacob S. Mosher was our professor of chemistry and medical jurisprudence; and later filled the chair of pathology, practice, clinical medicine and hygiene, as successor of Prof. Vander Poel and of Prof. McNaughton. He was a keen observer and expositor of the successive events and developments of his times. He was a tower of strength in this college. His sudden death, August 13, 1883, left a vacancy in our college and in the city.

S. Oakley Vander Poel was in every respect a large man; and was a worthy successor, in 1876, to the chair once held by Prof. James McNaughton. Our class had the benefit of both of these teachers. Dr. Vander Poel filled high positions outside of our college. He was surgeon-general of the State under Gov. King and under Gov. Morgan. Under Gov. Hoffman he was stationed at quarantine, where Dr. Jacob S. Mosher was his deputy. He held other high positions of duty. He was a busy and important man. And yet any medical student could approach him, sure of an attentive ear. His death occurred at the age of 62, March 12, 1886. It has been said, "To see the life of Dr. Vander Poel was to understand the meaning of *noblesse oblige*."

Dr. Thomas Hun, whose name has graced our college rolls from the earliest days in 1839, survived all these, his contemporaries, until June 23, 1896. "He was distinguished alike for the probity of his character, for his great generosity, and his literary attainments, as well as for professional success. He was born in Albany, and had nearly completed his 93rd year. With him there disappeared the last one of the faculty and instructors of the class of '68. They have gone to be with Galenus, with Hippocrates, with Æsculapius, in hades, the grave; where "there is no work, nor device, nor knowledge, nor wisdom." (Eccl. 9:10.) "There the wicked cease from troubling; and there the weary be at rest." "They shall lie down alike in the dust," (Job 3:17; 21:26) until that day when "all who are in their graves shall hear His voice, and shall come forth."

The talented Joseph Addison said: "When I read the several dates of the tombs, of some that died yesterday, and some six hundred years ago. I consider that Great Day when we shall all of us be contemporaneous, and make our appearance together."

Dr. Joseph R. Brown, after graduation, spent seven years in Texas. He settled in Seward, N. Y., about twenty years ago. He has two boys and two girls, and has been successful.

Dr. Edward F. Quinlan writes from 308 West 20th street, New York City: Much has been crowded into the thirty years since I left my *alma mater* in December, 1868. With my much prized parchment under my arm I returned to Monticello, New York, where I was born, reared and where I commenced and finished my medical studies. I hung out my shingle and went to work, and, in spite of the old adage that "a man is never without honor save in his own country," I met with a slow but gratifying success. I remained there twenty years, having a practice which extended from twelve to fifteen miles as the four points of the compass go. I filled every office in the Sullivan County Medical Society, from censor to president; was jail physician for fifteen years and physician to the Sullivan County poorhouse for six years. I served my county society for four years as delegate to the State Medical Society, and, in 1883, was elected a permanent member of the same. In the spring of 1888 I moved to New York City, where I have since resided. I am doing a general practice, and have succeeded beyond my expectations. Holding positions as medical examiner in three life insurance societies takes up all my spare time. I was married in 1871, and my family consists of a wife and two children. I was a charter member of the Albany Medical College Alumni Association of Greater New York, and have held office in it since its formation. Of all the names attached to my diploma in 1868, not one who affixed his signature then but that has "gone over the river." And bright men they were — alert, aggressive, unswerving in their duties as educators, and loyal to the college they loved so well.

Dr. E. R. Akin writes from Perry, Iowa, that he has been practicing in that town since the year after graduation, and has done moderately well. He has never taken any part in politics, and has never held any public office except in line with his work. He is local surgeon on the R. I. & P. R. R., president of the board of pension examiners, county physician, etc. He was married in January, 1876, to Miss E. A. Moore, of Belleville, Canada, and has had three children, two boys and a girl. He has never been sick and has never regretted his choice of a profession. He believes that he is living in the best town of the best county of the best State in the Union.

Dr. D. S. Fairchild writes from Clinton, Iowa: The first three years of my practice were in Minnesota; the next twenty-one years in Ames, Iowa, where, in addition to my professional work, I gave lectures on physiology and comparative anatomy in the Iowa State Agricultural College. In 1893, at the request of the Chicago & Northwestern R'y — in whose service I had been as district surgeon for some years — I removed to Clinton, Iowa, to take charge of the surgical service of the road for Iowa. In addition to the position of division surgeon for the Northwestern Company, I am special examining surgeon for the Chicago, Milwaukee & St. Paul system. For seventeen years I have been professor of pathology in the Iowa College of Physicians and Surgeons at Des Moines. In 1896 I was president of the Iowa State Medical Society. In addition to a somewhat busy practice I have found time to do some medical literary work in the way of articles for journals and papers, and addresses before various medical societies. In the thirty years of work I have lost no time on account of sickness, injury or accident, and I have been particularly fortunate in escaping sickness and death in my own family. My children have grown to maturity and have enjoyed the advantages of a university training. My son has graduated in medicine and has taken up work with me and is able to assist me materially in my local work, particularly as a considerable share of my practice is surgical and consulting and takes me from home often.

Dr. Stillman presented the following report as historian of the class of '78:

REPORT OF THE CLASS OF '78. DR. W. O. STILLMAN.

There were thirty-one members in this class. Four are known to be dead, as follows: Geo. L. Hopkins, DeWitt J. Matteson, George W. McLaughlin and George F. Smith. Of the remainder, fifteen have replied to letters of inquiry and twelve have not responded. Of the latter several have been heard from indirectly. The class of 1878 have done well as a rule, almost without exception, although none have achieved great fame or exalted position.

F. H. Brewer, of 223 Genesee street, Utica, N. Y., writes, that ten years ago he was at Madrid, St. Lawrence Co., N. Y., but five years ago removed to his present location where he is in active and successful practice. He has a wife and three children and would be glad to hear from any of his classmates. He expresses a warm interest in the A. M. C., and says, " Let us strive first to be men, then afterward physicians. Let us not only build up ourselves but others."

Edward W. Carhart is said to be located at Milton, Ulster Co., N. Y., and doing well.

Charles I. Conover practices at Charleston Four Corners, Montgomery Co., N. Y., and has been there since graduation. He is the only physician in the whole township and has a large country practice; has been twice married and has had two sons, one of whom only is living. Dr. Conover is well, but claims to be feeling the effects of his hard country drives and exposure.

John H. Cotter, formerly of Jackson Corners, Dutchess Co., N. Y., is now practicing at 39 S. Clover street, Poughkeepsie, N. Y. He at first began practice at Mount Ross, not far from Jackson Corners, but after two years removed to the latter place. Here for fourteen years he labored hard and had a gratifying success in his practice, his professional work carrying him many miles away in different directions. At last, tiring of the hardships of a country practice, he removed to his present residence in 1894. He is doing well and is well.

Earl D. Fuller, of 148 Columbia street, Utica, N. Y., has devoted himself to general practice for the last twenty years in the one place. He has been connected with St. Luke's Hospital for nineteen years, and was health commissioner for eight years. He is a member of the county and State societies, and has a fine working library and is well furnished with surgical instruments. Some time ago he was defendant in a malpractice suit involving a question of sanity, but was gratifyingly vindicated. He has a wife and two children.

Horatio Craig, formerly of Middle Grove, Saratoga Co., N. Y., is said to be located at Ballston Spa. in the same county.

George F. Gardner is said to be practicing at Pierrepoint Manor, Jefferson Co., N. Y.

Stephen A. Gates, formerly at Empire, Mich., is now located at East Port, Mich., at Room 9, Masonic Block. He writes that asthma compelled him to seek northern Michigan, but that now he is happily free from the disease, and is well satisfied with his position, financially and socially. He is married and has one son; is in perfect health, weighing 180 pounds, and would be glad to hear from his classmates.

Pierre C. Hoag is said to practice at Manhasset, Queens Co., N. Y.

Charles A. Ingraham, formerly at Mechanicville, Saratoga Co., N. Y., is now at Center Cambridge, N. Y., his native place, enjoying health and prosperity. After graduation he was at Quaker Springs, then Schenectady, and later Mechanicville. From the latter place he went to Troy on editorial work on a Troy daily, and later had a similar position on a New York paper, living in Brooklyn. He is well satisfied with his present location and sends kind regards to his classmates and the faculty. His family consists of a wife and three children.

Austin D. Johnson, of East Branch, Delaware Co., N. Y., writes that his nearest professional colleague is twelve miles away, and that he has plenty to do. He is well, was married since last report, has one son, is coroner, and might feel disposed to relinquish his practice in favor of some younger graduate of the A. M. C., in order to get a less trying position for himself, as hard work begins to tell.

Henry La Hann, Jr., is reported to be at Burlington, Racine Co., Wis.

Uriah B. La Moure is in practice at Albany, N. Y.

Henry Lilienthal is also living at Albany, N. Y., and writes that he has a fair practice, was married in 1882, and has four sons, ranging from seven to fourteen years of age, each of whom he designs shall occupy professional chairs in the Albany Medical College of the future. He calls upon the alumni of the college to provide for its needs for the future in new buildings and equipments.

Almer A. Lyker is reported in practice at Rural Grove, Mont. Co., N. Y.

Albert H. Mambert, of Rondout, N. Y., writes that he has continued to reside in the city of his original choice, and has been successful in his work. He has a good library and is still thirsting for knowledge; is president of a successful cooperative savings and loan association; is a member of the local health board, trustee of his church, on staff of city hospital and connected with county and State medical societies. His health is good and his family consists of his wife and three children. He is constant in his loyalty to his *alma mater*.

George F. Morris, of 161 West 87th street, New York City, who settled in that city soon after graduation, writes that he has been connected with the medical staff of the New York Health Department for seventeen years, which, however, has not prevented his being actively engaged in private practice. He is married and has one son now approaching college age. He is well and warmly interested in everything pertaining to the A. M. C.

Wm. L. Pearson, of Schenectady, N. Y., reports that he has always practiced in the city of his first choice, and that he has met with fair success.

G. P. K. Pomeroy, of Stuyvesant, N. Y., where he has always resided since graduation, says that he has been able to keep the wolf from the door. He has been health officer of his town for eighteen years, and several times president of his county medical society; is also a member of the State Medical Society. Rumor has it that his practice is large and remunerative.

J. P. Prendergast, of 2246 Sixth avenue, Troy, N. Y., reports a " bright professional career." He has constantly resided and practiced in Troy, and has been city physician, northern district, during 1880–1, and jail physician from 1883 to 1896. His practice is large and lucrative. He is married but has no family.

Wm. O. Stillman, now residing and practicing his profession at 287 State street, Albany, N. Y., after graduation went to Saratoga Springs, where for five years he found employment in medicine and surgery. In 1883 he went abroad and studied for a year and a half in the principal medical centers of Europe. Since then he has been constantly in Albany where he has a comfortable practice. He is married but has no children.

John C. Shiland is located in Watervliet, Albany Co., N. Y.

Theodore L. St. John is reported at Center Brunswick, Rens. Co., N. Y., where he is said to be doing well.

Frank B. Sutliff, formerly of Wailukai, Manii, Sandwich Islands, is now said to be practicing his profession at Sacramento, Cal., and is doing well.

George W. Van Tassel, of Freehold, Greene Co., N. Y., at which place he has resided from the first, reports that he has been married twice and is the happy possessor of a son and daughter. His professional life has been prosperous and successful, and he closes his letter with "Long life to the Albany Medical College."

Wm. Dunlap Walradt, of Castleton, Rens. Co., N. Y., is said to be doing well.

Edward E. Whitehorne is reported to be at Batavia, Ill.

Such is the history of the class of 1878, as gathered by its historian. While none of its members have conquered phenomenal careers for themselves, the class has furnished its share of honest, honorable, conscientious members to the profession, and has earnestly tried to reflect no discredit on its *alma mater*.

Dr. Macfarlane presented the following report as class historian of '88:

REPORT OF THE CLASS OF '88. DR. R. F. MACFARLANE.

Mr. President, Gentlemen of the Alumni Association and Members of the Class of 1888 of the Albany Medical College:

It gives me great pleasure and satisfaction to announce that the responses I have received from the members of the Class of 1888 have been most cordial, and give evidence of a deep love and veneration for *alma mater*. Many give expression to their respect for the faculty and a certain longing to renew the friendships formed thirteen years ago, to meet together here on this occasion and grasp the hands of those whom they learned to love and honor "for Auld Lang Syne."

Let us pause to shed a tear upon the graves of our cherished friends and classmates who have died during the ten years which have elapsed since we parted from them in this hall. Let us pay the tribute of respect we owe to their memories.

Robert M. Andrews died at Guilderland on October 18, 1888, scarce six months after we looked upon his smiling face for the last time. "He was a man, taken for all in all, we ne'er shall see his like again."

Adelbert W. Witter died at Quaker Street on the 29th of August, 1896, leaving a widow who writes that he was very successful in the practice of his chosen profession, highly respected in the community and deeply regretted by all. His was the death of the righteous man.

David James Barry died at Lee, Mass., on April 1st, 1897. We shall see no more the kindly face of our friend and comrade "whom none knew but to love," but we can never forget him.

Frederick Carr I have not been able to locate, but perhaps others of our class may be able to give us some intelligence of him.

Willard H. Fox was practicing for a time at Tacoma, Wash., but removed to Los Angelos, Cal. I have been unable to communicate with him as my letter was returned by the post-master of the latter city with the information that our comrade had removed thence. Fox was a very promising man and it is to be hoped that others of our class may have some intelligence of him.

William Hutchinson has not been heard from to my knowledge by any of our class since 1893. He was then engaged in some mercantile business, but letters sent to his hotel have been returned unopened.

Of George P. Rider we have been unable to obtain any intelligence. He was a man of great energy, tact and perseverance and I hope we may learn that he has had a successful career.

E. B. Wells, after leaving us, took a flying trip to Nebraska, returned and spent the summer of '88 in Blue Stores, Col. Co. In October, same year, he went to Findley, Ohio, and purchased a drug store and in a few months lost his money but kept the experience. In 1890 he went to Arcadia, Ohio, and has established a good practice. He is surgeon to the N. Y. C. & St. L. R. R. Was married in '91 and has a boy of five years.

J. J. Evans — old "Pap" — rusticated for a few weeks after graduation, then went to the N. Y. Polyclinic and took special courses in the eye, ear, nose and throat. In 1889 he located in Rochester and has since practiced there to his own satisfaction. Has been city physician, member of board of education, delegate to the Central State Medical Association and is medical examiner for several insurance companies. He was married in 1891 to Miss Helen A. Boshe, of Oneida, and has a little daughter. In 1893 he visited Europe and its principal cities and the hospitals in each and learned something abroad, but thinks American medical institutions and hospitals good enough for him.

Charles F. Clowe, Schenectady, went at once to Gloversville and opened an office and married in March, 1888, establishing himself in a house of his own. In September, 1889, removed to Schenectady, gave up practice, and in the following May started for Africa under appointment of the A. B. C. F. M., reaching his destination in the interior in October and remained there two years where he was continually busied attending to a large dispensary practice among the natives and traveling often to the various stations to attend rich missionaries. During this time he suffered severely from fever and finally was sent back completely prostrated in 1892 and reached home the same August. After recruiting his strength he opened an office in Schenectady the next winter, is doing well and will remain there. He is blessed with a quartette, two boys and two girls.

F. M. Barney, Dolgeville, N. Y., commenced practice there immediately after leaving college with his father, who died in 1888, September 2nd, and then continued alone until November, 1897, when he sold out to another and moved to Little Falls and is not practicing. He has been married ten years and has a daughter nine years old.

James B. Pratt is practicing at Honolulu, Hawaii, and is doing well.

Alfred F. Hodgman, Auburn, says: "My life has been uneventful since I came in '88. Had typhoid in 1897 and only recently recovered my strength." All last summer he was on the St. Lawrence too prostrated for any work. He is a member of the N. Y. S. N. G., 2nd Sep. Co., and is surgeon. Has been city physician a number of terms, was physician to the Cayuga Co. Orphan Asylum for three years. Is an ex-president of the Cayuga Co. Medical Society.

James Cronin is in practice at 336 Dearborn street, Buffalo, and has had rather an uneventful career. At first he commenced at his old home, Seneca Falls, N. Y., and remained there until July, 1890, when his office and all his belongings were destroyed by fire. He then went to Waterloo and staid there until he went to Buffalo in 1893, where he is doing pretty well although he had a hard time getting started.

J. M. McClelland, Hartwick, N. Y., writes with great warmth of his pleasant remembrance of *alma mater*. Within a week after he left us he located, and within one year he had a large general practice, and has been there ever since, except one year in Indiana. His health has been much better than when he was here. In 1894 he married and has a beautiful blue-eyed girl of three years. He has been a supervisor of his county and for several years health officer of the town.

A. M. Tuttle, Milford, Conn., went immediately to the Post-Graduate School, New York, and afterwards had, for several years, the usual experience of hard rides and poor pay, but he has been compensated by the possession of a lovely wife and two girls. At first he practiced five years in the wilds of Kent, Conn., three years in Bridgeport, and, within the past year, has bought a handsome home and valuable property in the delightful old town of Milford.

John J. Timlin, Rendham, Pa., went, about one month after getting his diploma, to Kingston, Luzerne Co., but remained there only eight months because of indifferent success and removed to his present location and has continued in practice with moderate success up to date, but has not been fortunate enough to marry.

Dennis M. Smith, Cambridge, N. Y., writes a very interesting letter. He has been in his present location since graduation, except a few months while establishing a branch pharmacy in Johnstown. He has been doing fairly well and at the present is getting along nicely. He has been health officer in his town for several years past, examiner for two first class life insurance companies and examiner in lunacy, so that from these sources and his private practice he can support comfortably his family of three.

Myron E. Stephens, Gardner, Ulster Co., writes in a philosophic and yet cheerful vein, sending a greeting to you all. After his service at the Albany Hospital he went to his present location and has had his share of wear and tear, worry and perplexity, success and failure, laudation and commendation. Here in the beautiful Wallkill valley, neath the shadows of the famous Shawangeonk mountains, he toils with much success, because there is no other " Doc." within six miles, and they must apply to him or die without a death certificate. He quotes a neighboring undertaker's estimate of a physician's success, that it ought to be gauged by the number of his death certificates and birth certificates. Having no competition our classmate is health officer, town physician, examiner of a great many insurance companies, a member of several societies, general embalmer for the undertakers, veterinary in emergency, eye, ear, throat and chest and stomach specialist, with plenty of surgery. He married Miss May Le Fevre five years ago and has two children, a boy of three and a girl of one year.

John S. Newcomb — " Sammy " — Spokane, Wash., writes with a full heart that he will be here in spirit if not in the body corporeal. Not until we had sung our parting song at the Delavan on that memorable night ten years ago did he realize that it was all over so far as college days were concerned. He had the diploma, was a doctor of medicine, but without clothes, without money, with nothing save what he had on his back. He determined to follow Horace's advice, " Go west, young man," engage in some humble occupation until such time as he could make a respectable start as a physician. In a few days he arrived in Bay City, Mich., with only a few dollars in his pocket and went to work on a coal barge as cook, and at the end of the season quitted the steamer at Duluth, and, striking out for a small lumbering town, went to work for a baker who swindled him out of most of his savings. He bought a ticket for Tacoma, Wash., and landed there with little cash, looked over that place and Seattle and " fetched " up at Olympia, Wash. At first he helped an older practitioner. He married in 1891, built a neat little home, and, in 1893, had a Christmas gift of a lovely little girl. Hard times coming on and collection very poor on the Pacific slope, he started for Lewiston, Idaho, on May 1, '96, but returned in four months to Spokane, Wash. He had a hard time to exist during the first winter, and in the spring came near losing his little girl by scarlet fever. His finances were so low that he sent his wife and baby to Olympia, and, hearing of a vacancy at Medical Lake, Spokane Co., he went there and has done very well indeed.

F. H. Lee, Canaan, Conn., returned to his home and assisted his preceptor, Dr. F. L. Smith, for about a month, and in May of the same year located at Canaan and has continued in practice there ever since, never having had reason to regret his choice of a profession nor location. On November 19, 1890, he married Miss Ada Strong, who has been a great help to him in whatever success he enjoys. He is a member of the Connecticut Medical Society and the Litchfield County Medical Association.

Zopher F. Dunning, Brooklyn, N. Y., has been in practice at his present location for seven years, owns a fine mansion, is married and has about as much of a practice as one man can attend to.

John Archibold, Cohoes, N. Y., located in Troy, N. Y., where he practiced about seven months, then removed his office to Green Island where he staid three years and enjoyed a fair practice, but his health began to fail and he removed to his home again in Cohoes where he had other business for a year or more, making no pretence to practice. When his health again permitted he resumed work and is doing fairly well. Is health officer and has been for the last five years. In the fall of '88 he was married to Miss Martha F. Rowland, of West Kortright, Delaware Co. They have had three children, all girls, two of them living.

C. B. Cunningham went back to his native town, Warrensburgh, and commenced practice forthwith. The first year his cash receipts were two hundred and sixty-three dollars. His career has been rather uneventful; his practice is better now than at first and he is making a comfortable living.

J. W. Quinlan writes: For the first three or four years after graduation I was somewhat of an itinerant. In the fall of '91 I located at Argusville, New York, where for over five years I enjoyed(?) a large country ride on some of the worst roads to be found in the State. During these years I ran across everything mean and obscure to be met with in practice, surgery or obstetrics. While they were "rich in experience" I cannot say they were in lucre; there was too little cash and too much barter rendered in payment of hard-earned bills. This fact, together with a breaking down of my health, induced me to make a change, and a year and a half ago I came to Fort Hunter where I am working into a good practice and hope to make this a permanent location. In June of '88 I married Miss Kittie Bell Powers with whom I lived happily for seven years when she was cut down by pulmonary tuberculosis. She left me a son and daughter. For my second wife I married Miss Amy May Van Alestine. She has presented me with another of the luxuries of life in the shape of a fine boy. I am examiner for several life insurance companies and health officer of the town of Florida. I am a member of Schoharie Tribe of Improved Order of Red Men. Am the third member of the

Class of '88 to locate at Fort Hunter. Dr. Andrews, who died here of typhoid fever, had a good practice and was well liked by every one. Dr. Witter was here about a year and then moved to Quaker Street, New York, where he died of consumption.

Dr. George G. Lempe writes: Remaining in Albany, I practiced with my old preceptor, Dr. Swinburne, till his death about one year later placed me in possession of his office till when his wife died, one and one-half years later, the heirs refused to rent the property, and I established myself across the street where I have been practicing since. I had the good fortune to be appointed assistant demonstrator for two years, and was instructor in physiology for a year in our old *alma mater*. I have been for seven years the attending surgeon at the Homœopathic Hospital. I also am examiner for health officers of the State of New York in the Civil Service Commission. Am examiner in four insurance companies, member of a number of societies, clubs, etc., and have been a member of National Guard for almost ten years.

Dr. Rudolph Bestle writes: After graduating from the A. M. C. I started in Troy, N. Y., my native town, but left after one year, and went to a small town called Burke (Franklin Co.), N. Y., where I had a large practice, and stayed for seven years. As the climate was cold and the pay slow I thought I would try again and am now in this town where I have the lion's share of the practice. Soon after graduating I married and became the father of two children, a girl and a boy, but the boy did not stay long. While my wife was visiting her brother the little fellow put a stick of candy in a bottle of cocaine crystals and was dead in twenty minutes.

The recording secretary then presented the following communication:

WAKEFIELD, CLAY CO., KANSAS, *April* 6, 1898.

Dr. Willis G. Tucker:

MY DEAR DOCTOR. — My " Sheepskin " bears the date of December 23rd, 1861, and was issued by the Albany Medical College, and because I possess such a document, and for sundry other reasons, I now address you as the representative of the graduates of the old college. By force of circumstances I am compelled to be absent from your next meeting, which, I suppose, will soon occur; that is, my *body* will be absent, but the *spirit* (or that part of us which thinks and remembers), which is attached to my organization will, I think, have business in Albany about the time " the feast of reason and flow of soul " is under full headway.

I suppose it is natural for the aged to love to turn back and dwell upon the scenes recorded upon the pages of the diary of life, and fondly linger, as memory aids the record in restoring the scenes and incidents which were full of pleasure and joy to them; so I love to look back to the time when my home was in Albany, with its more than pleasant surroundings and associations of various kinds. Of those I met between 1845, when I first went there, until I left in 1866, but few are, I suppose, alive to-day. In our western way we would say "they have gone out over the divide."

Of the professors in the college, I think but one (Prof. Porter) survives. Prof. Quackenbush, not only my precentor but beloved friend, and Armsby, the anatomist, who only required a single touch of one of his skilled fingers to name or locate any bone of the body; and the venerable March and McNaughton, princes among instructors; and Townsend, the quiet, learned and beloved; and Porter, who could analyze our mental capacities as well as our bodies; all, all are held in sweet and loving remembrance.

My classmates who are still with us are, I suppose, scattered up and down the earth, putting in their best work to alleviate suffering humanity, or finding out and developing such truths and agencies as shall make man's residence upon earth less painful and wearying to mind and body.

Towards the last of August, 1862, I was examined and pronounced competent to be an assistant surgeon of New York troops; on the 4th of September I was "mustered in" at the Capitol as assistant surgeon of the 139th Regiment of N. Y. Vols., and the same night I left for Brooklyn, and on the 5th I joined my regiment; on the 9th we went on board a steamship for Washington, D. C.; the trip was uneventful except that one or two men tried to kill themselves; at Washington we received our arms while passing Mount Vernon many of us went ashore to bow in reverence at the tomb of Washington. The first night on the vessel was rather a lively one for me; there were a thousand men and *one* doctor to eliminate the bad rum and deviltry that had been "cumulative" for the past three weeks. I took a place on deck, had it surrounded by a wall of stacked rifles and knapsacks, and here in this "hospital," about fifteen feet square, the graduate of the Albany Medical College was brought face to face with some knotty problems regarding human nature, and for awhile he was a firm believer in the doctrine of total depravity, and felt his teachers had been guilty of neglect in not giving some hint of what his experience might be. It is not strange that all my cases were the result of drinking liquor in "heroic doses" frequently repeated; four raving maniacs at one time made quite a respectable representation of a mild sort of "Gehenna," but when the more quiet began to cut their throats and try to jump overboard, it did seem as though his infernal majesty was raging like a roaring lion for prey and holes and corners trying. I possessed a goodly amount of strength, and had the help of many men who did just as I wanted them to do, and the banner of the loved old college did not trail in the dust. It was not even lowered; all were brought around except one man who was not suspected. When these same thousand men felt the influence of military discipline, they formed one of the finest bodies of troops in the service.

During my first year of service, I was at Hampton Hospital, where I had two wards (140 patients). Afterwards I went with the regiment to Williamsburg, Va.

McClellan, in his campaign up the peninsula, had some of his hardest fighting upon the ground where we were encamped. The white, wooden headboards told of the boys who fell; they were thick as " leaves in Vallombrosa," and " N. Y. Vols." was marked on many. One of my Sunday-school scholars, Whitman Mattoone, whose father was a lumber dealer in Albany, was missing. I think I examined a thousand headboards, there and at Fortress Monroe cemetery, in search of his name. He was " missing; " another Albany boy, Willie Snell, was missing in the same way at Antietam.

While at Williamsburgh for several months I had charge of the " Eastern State Lunatic Asylum," about 290 patients. The air was full of malaria and all of the surgeons who could got leave of absence; I did not ask for one; I stuck and did my work.

After performing such duties as were assigned us, in the due course of events, our regiment went " marching on " towards our " friends the enemy; " and we found him. After my classmate and comrade, Surgeon J. J. Van Rensselaer, had completed his term of service, I succeeded him as brigade surgeon (having previously been promoted to full surgeon) which position I held until mustered out. For awhile, during the twelve days mix-up at Cold Harbor, I was division surgeon, when surgeons were knocked out by the dozens. Some of you may have been through the mill and know how the upper and nether stones feel as you waltz along. For twelve days we were under fire, a fire as hot as that of Daniel's fiery furnace. I know how I felt in or out of the trenches. My experience was the same as others. When I visited the battlefield just eleven months after, to disinter and take home the body of our Lieut. Colonel, the ground was yet covered by our dead who had fallen in one of the most terrific charges on record. With me were several men and my wife, who was the first northern woman to visit the field: we had taken Richmond and the war was over.

I was the first medical officer to enter Richmond, being senior officer upon the staff of the general (Ripley) commanding the brigade that took formal possession of the city. I visited every hospital in and around the city, and I now have the names of every Confederate surgeon, the capacity of the hospital, the patients, subsistence, etc., of which I made report to the surgeon-general of the U. S. A. At the beginning of the campaign in the spring of 1865 I was made chief operating surgeon of our corps (the 24th) by order of corps commander.

Well, here I am in Kansas! I have not practiced for the last ten years. For twenty years I did my share of country practice, but the body tires easily under the burden of seventy years. During my first ten years there were no roads, and I always went on horseback. There were no guides or landmarks, and the shortest cut " across lots " was the route chosen. On returning, especially at night, I would get the " section, range and township " where I was, and, knowing my own home, would mentally make my course (just as sailors make their course by chart), and then, guided by the stars, or moon, or wind, set out across the prairie. Riding on the prairie at night one seems within a vast bowl or hollow, and always going up on the farther side.

The country doctor is obliged to face about as many "perils" as St. Paul enumerates as having opposed him during his Christian life; and that brings to my mind what St. Paul said in one of his Epistles, "See how great a letter I have written;" but perhaps you will pardon the length of this, for it is the privilege of age to be garrulous; be that, however, as it may, I cherish the most lively feelings of love and respect for the dear old city and still dearer "Knowledge Box" where I received my medical and surgical initiation.

During my studies I was bookkeeper in a large manufactory, and had to work hard. Prof. Quackenbush, our family physician and friend, encouraged me when almost ready to give up; for I was "short" on time. I had another friend and helper, one who has been with me wherever I have been for the last forty-eight years, my beloved wife; she had an excellent theoretical knowledge of anatomy and physiology, and she would "quiz" me at every opportunity, not only giving but for herself acquiring knowledge, so when I entered the army, she went also, and served as nurse, being regularly mustered in, as all had to be; she has always been a "comrade" and now in our old age we are together waiting for the good Lord to call us home.

Permit me to close with this sentiment, being the farewell words of the "Father of our Country" to his officers:

The graduates of Albany Medical College: "May your last days be as peaceful and happy as your former ones have been victorious and honorable."

I am, my dear doctor,
With much respect.
Your Obdt. Servt.,
ASAHEL BURT, JR.

On motion of Dr. Tucker, the thanks of the association were tendered the historian and class historians for their interesting reports, and they were requested to furnish the manuscript of the same to the executive committee for publication.

The recording secretary stated that biographical notices of deceased members of the association had been published in the ALBANY MEDICAL ANNALS during the year, and read the following

NECROLOGY.

Dr. Benjamin Franklin Sherman ('41), at Ogdensburg, N. Y., May 30, 1897, aet. 80.

Dr. William C. Wey ('49), at Elmira, N. Y., June 30, 1897, aet. 68.

Dr. Marinus W. Seaman ('53), at Denver, Col., September 15, 1897, aet. 67.

Dr. LeRoy McLean ('55), at Troy, N. Y., April 23, 1897, aet. 67.

Dr. George H. Newcomb ('55), at Albany, N. Y., February 22, 1898, aet. 72.

Dr. Henry G. McNaughton ('56), at Albany, N. Y., April 18, 1898.

Dr. Lyman M. Tuttle ('59), at Holyoke, Mass., April 26, 1897, aet. 60.

Dr. Cornelius A. Groot ('64), at Auburn, N. Y., August 6, 1897, aet. 60.

Dr. Conant Sawyer ('64), at Auburn, N. Y., February 20, 1898, aet. 56.

Dr. William H. Robb ('65), at Selma, Ala., January 12, 1898, aet. 54.

Dr. Lewis W. Pendleton ('65), at Palm Beach, Fla., January 13, 1898, aet. 53.

Dr. James F. Murray ('66), at Gloversville, N. Y., December 5, 1897, aet. 52.

Dr. Caleb. Lyon ('71), at Rossville, Staten Island, September 11, 1897, aet. 55.

Dr. Henry Niles Johnson ('81), at Coeymans, N. Y., July 12, 1897, aet. 45.

Dr. Edwin B. Karner ('83), at New Marlborough, Mass., December 27, 1897, aet. 41.

Dr. William H. Lemrow ('86), at Troy, N. Y., May 17, 1897, aet. 32.

Dr. William J. Kernan ('91), at Albany, N. Y., November 24, 1897, aet. 32.

Dr. John Jones ('93), at Middle Granville, N. Y., November 27, 1897, aet. 33.

Dr. Joseph B. Swett, Jr. ('94), at Albany, N. Y., October 3, 1897, aet. 32.

The committee appointed to nominate officers presented the following report, which was read by its chairman, Dr. D. C. Case:

For President,

DR. WILLIS G. TUCKER ('70), Albany, N. Y.

For Vice-Presidents,

DR. JOHN ARCHIBOLD ('88), Cohoes, N. Y.
DR. FRANK A. PALMER ('82), Mechanicville, N. Y.
DR. CHARLES E. SMITH ('58), Whitesboro, N. Y.
DR. PERCY G. WALLER ('93), New Baltimore, N. Y.
DR. JOHN A. CUTTER ('86), New York City.

For Recording Secretary,

DR. J. MONTGOMERY MOSHER ('89), Albany, N. Y.

For Corresponding Secretary,

DR. ANDREW MACFARLANE ('87), Albany, N. Y.

For Treasurer,

DR. T. F. C. VAN ALLEN ('83), Albany, N. Y.

For Historian,

DR. HARRY S. PEARSE ('92), Albany, N. Y.

For Members of Executive Committee (term three years),

DR. HERMAN BENDELL ('62), Albany, N. Y.
DR. H. E. MERENESS ('74), Albany, N. Y.
DR. ROBERT BABCOCK ('84), Albany, N. Y.
DR. ARTHUR G. ROOT ('90), Albany, N. Y.

On motion of Dr. C. H. Moore, the report was accepted and adopted, and the recording secretary was instructed to cast a ballot on behalf of the association for the gentlemen named therein. This having been done, those named in the report were declared by the president duly elected officers of the association for their respective terms.

Dr. Bendell presented the following resolution, which was adopted:

Whereas, This Association has in the past neither received nor demanded any share in such profits as may have accrued from the publication of the ALBANY MEDICAL ANNALS, and has never assumed any of its financial obligations, nor has been held responsible for such, therefore be it

Resolved, That this Alumni Association, while permitting the use of its name by the publishers upon the title page of the journal, disclaims all financial responsibility in the matter of its publication.

A discussion was then raised as to the advisability of an alumni dinner at the next meeting of the association, and a motion made by Dr. Cutter that there be an alumni dinner next year was unanimously adopted.

On motion of Dr. Cutter, a vote of thanks was tendered the faculty of the college for the collation and reception of the present reunion.

Dr. Tucker, President-elect, was introduced to the association and thanked the members present for the honor conferred upon him, and assured them of his desire to do all in his power to promote the prosperity of the association.

After the announcement of the order of exercises for the afternoon and evening, no other business appearing, the meeting adjourned.

COMMENCEMENT EXERCISES.

The sixty-seventh commencement exercises of the Albany Medical College were held at Harmanus Bleecker Hall, on Wednesday afternoon, April 20, 1898, at three o'clock, in the presence of a large audience. Dr. A. V. V. Raymond, President of Union University, presided, and upon the stage were seated the members of the faculty, officers of the Alumni Association and prominent citizens.

The following was the

ORDER OF EXERCISES.

Overture — "Der Tambour der Garde." - - - - - - - *Titl*

Prayer — Rt. Rev. T. M. A. BURKE, D. D.

Music — FANTASIE: "My Old Kentucky Home," - - - - - *Langey*

Essay — EMMOTT HOWD.

Music — DESCRIPTIVE FANTASIE: "The Cavalry Charge," - - - *Lüders*

CONFERRING DEGREES,

BY ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,

President of Union University.

Music — FLOWER SONG: "Hearts and Flowers," - - - - *Tobani*

Address — Hon. JAMES A. ROBERTS,

Comptroller of the State of New York.

Music — AIR DE BALLET: "Love's Whisper," - - - - - *Marks*

Valedictory — OTIS ZALMON BOUTON.

Music — PIECE CHARACTERISTIQUE: "At a Georgia Camp Meeting," *Mills*

REPORT ON PRIZES AND APPOINTMENTS.

Benediction.

Music — WALTZ: "Au Revoir," - - - - - - - *Waldteufel*

The graduating class was as follows:

ROBERT WESLEY ANDREWS,	Poughkeepsie, N. Y.
JOHN ALBERT BARNES,	Troy, N. Y.
HENRY ROGERS BENTLY,	Saratoga Springs, N. Y.
OTIS ZALMON BOUTON,	Hyndsville, N. Y.
MELEATUS BRUCE,	Hyndsville, N. Y.
HIRAM ARTHUR BRYANT, A. B.,	Albany, N. Y.
FREDERICK FILLMORE BURTIS,	Troy, N. Y.
WILLIAM NESBITT CAMPAIGNE,	Troy, N. Y.
WILLARD OSCAR CARPENTER,	Troy, N. Y,
THOMAS DUNDON COLLINS,	Salem, N. Y.

James Monroe Cronk,	Hudson, N. Y.
Raymond Goulden Edmans,	Troy, N. Y.
Julian Allen Gaul,	Kingston, N. Y.
George Miller Gilchrist,	Albany, N. Y.
William James Green,	Saratoga Springs, N. Y.
Minas Sarkis Boulgourjoo Gregory,	Albany, N. Y.
William Edward Hendry,	North Kortright, N. Y.
Frank Hinkley,	South Westerlo, N. Y.
Lyle Breslau Honeyford,	Hudson, N. Y.
Emmott Howd,	Troy, N. Y.
Burton Kenyon Hoxsie, Jr.,	Auburn, N. Y.
Frederick Israel Jansen, Ph. B.,	Fonda, N. Y.
David John Jenkins,	Albany, N. Y.
Frank Merriam Johnson,	Mexico, N. Y.
Clayton Taylor King,	Batchellerville, N. Y.
Rollin Alexander Kirkpatrick,	Troy, N. Y.
Charles Franklin Kivlin,	Valatie, N. Y.
Earl Parsons Lasher,	Gloversville, N. Y.
Roy Lathen Leak,	Watertown, N. Y.
William John McGrath,	Liberty, N. Y.
Charles Goul McMullen,	Schenectady, N. Y.
William Radley Miller,	Albany, N. Y.
John Joseph Mulcahy,	Albany, N. Y.
Aaron Lewis Newton,	Albany, N. Y.
William Rushmore Nichols,	West Sand Lake, N. Y.
Joseph Patrick O'Brien,	Albany, N. Y.
Pierce James O'Brien,	Troy, N. Y.
John Jacob Osterhout,	Colonie, N. Y
Edward Charles Podvin, A. B.,	Adamsville, N. Y.
Frank Luther Posson,	Albany, N. Y.
Charles Samuel Prest,	Cohoes, N. Y.
Edward Augustine Quinlan,	Hoosick Falls, N. Y.
James Francis Rooney,	Albany, N. Y.
Lebbeus Burton Schneider,	Troy, N. Y.
Charles Abram Shultes,	Hunter's Land, N. Y.
Creighton Walter Skelton,	Rondout, N. Y.
George Birch Stanwix,	Albany, N. Y.
Edmund Stevens,	Brooklyn, N. Y.
William James Swart,	Mariaville, N. Y.
Gilbert Van Valkenburg Thomas,	Rensselaer, N. Y.
Alvah Harry Traver,	Sand Lake, N. Y.
Benno George Troidle,	Albany, N. Y.
Edgar Albert Vander Veer, Ph. B.,	Albany, N. Y.
Douw Lansing Van Derzee,	South Bethlehem, N. Y.
Fred Bain Weaver,	Gallatinville, N. Y.
William Luther Wilson, Ph. B.,	Scotia, N. Y.
Walter Harold Wood,	Argyle, N. Y.

The dean of the faculty, Dr. Vander Veer, presented the prizes. He announced that an alumnus of the college had left a bequest of five thousand dollars, the interest of which would be in the future available for a prize to be decided upon by the faculty. He then read a report on the Vander Poel prize, endowed by Mrs. Gertrude W. VanderPoel, in memory of her husband, the late S. Oakley VanderPoel, M. D., for many years a professor in the college, stating that this prize, consisting of a clinical microscope and accessories, offered to the senior student passing the best bedside examination in general medicine, had been awarded to Dr. James F. Rooney; and that at the competitive examination for hospital positions, the following appointments had been made: Albany Hospital, Drs. A. H. Traver and C. G. McMullen; St. Peter's Hospital, Drs. J. B. O'Brien and G. M. Gilchrist; Ellis Hospital, Schenectady, Dr. F. F. Burtis.

The prize offered by Dr. Vander Veer for the best report of the surgical clinics was awarded to Dr. Otis Z. Bouton, and that offered by Drs. Hailes and Morrow for the second best report was awarded to Dr. A. H. Traver.

The prize consisting of an ophthalmoscope, offered by Dr. Merrill for the best report of the eye and ear clinics, was awarded to Dr. A. H. Traver.

The Townsend Physiological prize, endowed by the late Professor Franklin Townsend, Jr., M. D., was awarded to Mr. Arthur J. Bedell, for passing the best examination in physiology at the end of the first year of study.

Dr. Boyd's prize to the student passing the best final examination in obstetrics was awarded to Dr. M. Bruce.

The prize consisting of a case of surgical instruments, offered to the senior student pasing the best final examination, by Dr. T. W. Nellis, was awarded to Dr. L. B. Schneider.

The prize offered by Dr. H. R. Powell to the second-year student passing the best final examination, consisting of a general operating case, was awarded to Mr. F. D. Branch.

A prize consisting of Gross' complete pocket case of instruments, offered by A. B. Huested & Co. to the first-year student passing the best final examination, was awarded to Mr. W. H. Stearns.

Dr. Bigelow's prize for the best dry preparation of the nose and nasopharynz was awarded to Dr. B. G. Troidle.

VOL. XIX JULY, 1898 NO. 7

ALBANY MEDICAL ANNALS

Original Communications.

For the ANNALS.

INDIGESTION IN BREAST BABIES.

BY WALTER G. MURPHY, M. D.,

East Hartford, Conn.

The growing tendency toward the artificial feeding of infants is the natural outcome of increased knowledge of the subject of substitute feeding, improved methods, the cheapness of all commercial foods and the simplicity of their preparation. Added to this, also, is the evident disinclination of many women to nurse their babies, even when perfectly able. The necessary self-denial incidental to maternal feeding, and the discomfort experienced by many women is apparently sufficient reason to substitute the bottle for the breast.

At a meeting of one of our medical societies a physician said that nowadays women seemed to be divided into two classes, those who would nurse their children and could not, and those who could and would not.

That the methods of substitute feeding have improved, no one who has followed the advance in the subject can deny; and yet, with our better milk supplies, milk laboratories and the many working analyses of human milk, there are conditions in artificial feeding difficult to overcome, which still make maternal feeding, when normal, the proper nutriment for the young child. The best method of artificial feeding cannot compare with the healthy, natural secretion of milk of the human breast, free from all fermentative and pathogenic bacteria, and its several constituents held together in suspension with a nicety which no artificial means can equal.

Unfortunately, however, all breast milk is not normal, healthy milk, and from various causes does not agree, and the child, as a result, suffers from that complex train of symptoms known as indigestion. Instead of plump and happy, the baby is below weight, poorly nourished and fretful. Its skin is harsh and dry, the tongue red and at times coated; vomiting is not infrequent. The stools are unnatural, often hard and of an ashy-gray color, or loose and greenish, containing excess of mucus, and in the foul-smelling movements are noticed granular masses of curd.

Dunglison explains indigestion as a state of the stomach in which its functions are disturbed, without the presence of other diseases.

Children are particularly liable to disturbances of the digestive tract, and the form of dyspepsia, if a classification of a functional trouble is attempted, is apt to be intestinal rather than of the stomach, as we should expect from a consideration of the anatomy and physiology of infancy. The small size and vertical position of the stomach, the abnormal length of the lower part of the colon, the partial development of the digestive glands, the predominance of the lactic over muriatic acid, and the size and importance of the liver, all point to the greater importance of intestinal digestion. Chittenden says in this connection that gastric digestion is the preliminary stage to the more complete protolytic digestion carried on in the intestine.

The saliva is absent or scanty until the third month, and the glycogenic function is slight. The gastric juice is active, and, according to Escerich, the digestion of proteids is usually complete when given within physiological limits; but the disposition of the fats is more difficult, as we would expect also from the late development of the full power of the pancreatic juice.

The bile, according to Money, is poor in salts necessary for the complete assimilation of fats by the infantile alimentary juices. Escerich has found large quantities of fat in the movements of children fed on milk.

From the foregoing facts we are justified in stating that intestinal digestion in infants, while more active than the gastric, compared with the adult, all organs of digestion are in a state of very imperfect development, and on that account particularly liable to dyspeptic disturbances if the food is of an abnormal character.

As milk is or should be the proper diet for the young child, and as this paper has more particularly to do with breast-fed babies, the causes of indigestion must be sought for in the mother and her milk, and then in the child.

The secretion of milk is a study of great interest, and nature's apparatus is peculiarly perfect, under normal conditions, for the performance of its function, but so intimately controlled by the nervous system that variations are common. Milk is composed of water, fat, sugar, proteids and ash in varying proportions, and is the result of the activity of certain cells forming the epithelium of the mammary gland (Foster). Harrington's analysis, quoted by Rotch, gives the following composition of average breast milk:

Reaction	Slightly alkaline.
Specific gravity	1028-1034
Water	87-88
Total solids	13-12
Fat	3-4
Sugar	6-7
Proteids	1-2
Total ash	0.1-0.2

A fact to be noted in this analysis is the large proportion of water found in breast milk, and in this connection the following quotation from the *Medical Record* is suggestive: "It is a mistake to suppose that, because milk is a liquid food, it is at the same time a drink which is capable of satisfying the thirst of infants. Although milk appeases hunger, it makes thirst. It is thirst, in many instances, which causes healthy breast-fed infants to cry for long periods of time. There are many cases of indigestion due to weakness or insufficiency of the child's gastric juice, which would be greatly benefited by an occasional drink of water." Rotch also calls attention to this fact, and emphasizes the importance of water in addition to that contained in the milk.

Fat. — In the above analysis the per cent. of fat is given as

3 to 4. In individuals it is considerably higher, and Adriance reports cases of only 2% in apparently healthy women, whose babies were doing well. The percentage varies, but in any case a child must have an amount equal to its needs. Too little fat is the cause of much trouble in the child's digestion, tending to constipation, and in time nutrition invariably suffers.

The amount of fat present in milk is controlled to an extent by the diet of the mother, and is increased by proteids and diminished by fatty foods. Pflüger speaks of a bitch fed on meat alone, for a given period, which gave off more fat in her milk than she could have possibly taken in her food, and that, too, when she was gaining in weight.

Proteids. — The proteid elements of milk are also the cause of much suffering in the child, forming, with water and fat, the most important constituents. Milk sugar, salts and the ash are all necessary in their proper proportions, but probably their influence is less marked than the fat and proteids, the latter being particularly important.

During the earlier days of milk secretion, the colostrum period and toward the end of lactation the proteid elements are normally increased, and at any time the proper relationship may be disturbed by worry, anxiety, overwork, lack of exercise and too frequent and prolonged nursing.

As a general rule, women who are sick or convalescent, who suffer from some grave constitutional disorder, who are pregnant or markedly anæmic, should not nurse their babies, and no effort should be made to induce them to continue.

In functional disturbances, when the normal equilibrium of the milk is deranged, I believe a fair measure of success may be expected, and often the bottle rendered unnecessary, from a careful investigation of the cause and the correction of the faults of nursing. And this suggests the question, What are the usual causes of disturbed lactation?

Any disturbance increasing the proportion of proteids or lessening the amount of fat will cause dyspeptic symptoms in the child.

The proteids may be disturbed by too frequent nursing, lessening the watery elements and increasing the solids; too long intervals between nursings, increasing the water and decreasing the solids; nervous disturbances, worry, anxiety, overwork, constipation, night nursing, and all severe emotions. It is difficult, and at times impossible, to correct the proportion of proteids, but with the fats an increase of proteid elements of food usually increases the percentage of fat in milk.

Occasionally we find a baby who is upset from some article of food in the mother's diet, but usually, if the nursing woman limits herself to the plain foods, and with rather more liquid elements, there is no trouble from this source.

With the use of Holt's apparatus a fairly accurate estimate may be made of the proportion of proteids and fat of breast milk. Dr. Tuley has employed this apparatus with success, and in 200 examinations of human milk the condition of the milk and the progress of the child tallied in every instance.

Knowing the abnormal relation of the several constituents of milk, much can be done by proper diet, exercise and care in the mother to modify the milk to normal conditions.

In these cases of indigestion the question of treatment is often solved by the mother. One food after another, as the neighbors may suggest, is tried, sometimes with benefit, but more often with direct harm to the child.

To the conscientious physician, who looks beyond the present in the child's welfare, the treatment is one of perplexity, and the question whether to continue with the breast or to substitute the bottle is difficult to determine. Given a child who is fretful and apparently never satisfied, who is losing ground and is below the weight of other children of his age, who is wakeful at night and needs more or less constant attention, the temptation to resort to artificial feeding is great.

At times experience shows this is the best thing to do, and the baby gains and grows nicely, but in other cases, not uncommon, the results are even worse than on breast milk, and the case progresses from one stage of decline to another, and the baby finally succumbs to the first acute disease it may contract, simply from lack of sufficient resistance and strength.

This question of diet is not one to be decided off-hand. All conditions must be considered thoroughly and carefully, and whenever possible the choice should be breast milk, if its analysis is at all near normal. I believe many children are deprived of breast milk, often in the heat of summer, when, with care and study, the cause of disagreement could be determined and corrected. In a goodly proportion of cases much can be done in changing a poor milk to a good milk, but occasionally, and in substitute feeding also this is noticed, our methods seem all wrong, and our results are entirely unsatisfactory, not because we are at fault necessarily in our premises, but on account of some inherent weakness or inability to respond in the child, with a falling off instead of a prompt response to our remedies.

Chronic diseases are not frequent in childhood, the natural activity of all functions tending to acute and rapid changes in the economy, rather than the more gradual changes of adult life. Occasionally we meet with naturally weak digestion, diatheses, syphilis, anæmia, Bright's (of which I have seen one case in infancy), and such allied disorders affecting, as they must, the digestive apparatus.

To illustrate what may be done, under favorable conditions, in changing a poor milk to a milk of good average quality, the following cases in practice will serve to demonstrate that attention to details of nursing will often tide over an anxious time and render the bottle unnecessary:

Case I. In which the watery elements of the milk were lessened and the solids increased by too frequent nursing. Baby G., two months old, was brought to me suffering from colic, vomiting, diarrhœa and loss of weight. Movements contained undigested curd.

Mother nervous and worried, not inclined to exercise, but with abundance of milk, showing on examination a high percentage of proteids.

Baby restless during the latter part of the day and in the evening, but would sleep fairly well, and with only one or two night nursings. In the morning bright and seemed to feel well, but would nurse often during the day. Toward noon symptoms of indigestion would come on, and gradually grow more severe, so that by evening the baby would feel pretty miserable.

Treatment. — Baby to be nursed at two-hour intervals, gradually extended to three during the day — none at night — and to be given plenty of boiled water to drink. Mother to exercise more and to cease worrying.

Result. — Cure.

Case II. Increased proteids from constipation and excessive worry in the mother.

Baby H., two months. Mother very nervous and worried; milk poor, containing excess of proteids and insufficient fat. Baby presented usual symptoms of indigestion, and constipated.

Treatment. — Exercise, more meat to be eaten, regulate bowels, and to cease worry.

This baby would probably have been changed to artificial food except for approaching hot weather.

Mother encouraged to nurse her baby, and assured that she would be successful.

This seemed to have a good effect, for she became more quiet and less anxious and worried.

Result. — Baby one year old, and while not a large child, is well, and shows no symptoms of malnutrition. Milk improved and agreed perfectly; bottle unnecessary.

Case III. Prolonged nursing.

Baby P., fourteen months old, and still given breast milk. Restless and did not sleep well, and would sweat about the head when he did sleep; inclined to vomit; constipated; pale, and backward in teething and walking. Nursed every two hours during the day and frequently at night. Proteids high.

Treatment. — Baby to be weaned and to be given cow's milk.

Result. — Immediate improvement.

Case IV. Impoverished milk from improper nursing.

Baby M., three months. Mother had suffered from intensely inflamed nipples, and had been obliged to use a breast shield in nursing her baby. After a short time baby would not nurse without the shield, and milk became scanty. Baby showed result of impoverished milk, and an effort was made to improve the quality of milk, but unsuccessfully. Lack of stimulus to the nipple the probable cause.

Case V. Illustrating the difference in digestibility of fore and middle milk.

F. twins, aet. four months. As is often the case, one baby strong and healthy, the other weak and not doing well. It was the custom of the mother to nurse the stronger baby first, perhaps because she could cry louder than the little sister. First baby gave no symptoms of indigestion, but second had colic, vomiting, and movements contained curd.

I was called to arrange a diet for the little one, but before doing so suggested that she be nursed first, with ʒ ij of boiled water before nursing, and that her sister be given the stronger milk.

Result. — Satisfactory, and both babies doing well.

Other cases have occurred, but it is unnecessary to continue, except to emphasize the importance of determining the cause of the indigestion before resorting to the bottle. When we remember that a baby receiving breast milk, even if necessary to supplement with some artificial food. has a much better chance than one fed entirely on prepared food, I am sure we will be amply repaid for the investigation and more careful study of our cases.

THE RAILWAY SURGEON AND HIS WORK.*

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Mr. President, Gentlemen of the Society: It is my desire to show in a short paper some of the reasons why railway surgery has become prominent as one of the special branches of the general art, and to relate the doings of surgeons employed in such work.

All the nowaday specialties were born from the demands made upon the profession for more thorough insight into certain cases, which were rapidly multiplying themselves, and for the consideration and treatment of special lines of the same which were found to be necessary. Those employed in treating any large number of cases of disease or injury resulting from causes consequentially the same, would naturally be led to a more proper conception of the demands of such cases in the direction of consideration and treatment. In looking to the railway we find that upwards of one million men are employed in a special work, and that this is of a character, the performance of which is fraught with much danger to both life and limb. We find that of this number forty thousand are annually injured, which means over one hundred daily, and this pertains entirely to the working force of the railway, not including the passenger service. We find further that of this army, the wounds and injuries received are to a great measure along the same lines, differing only in the matter of extent and severity. That the cause of production being in every case the same, the injuries necessarily follow along similar lines. The larger majority of these come directly to the surgeon for treatment, so where many are attended by comparatively few, it is a fact, if any special features existed in this class of injuries, or that any particular line of treatment was found to be followed by better results than from those ordinarily practiced, such would become factors, and the adoption and carrying out of such lines would be generally made by those to whom the cases are referred. If we look for a moment at the nature of the bodies which produce these injuries, we will note the fact that they are in every case made up of prodigious weights. and that in addition to the matter of weight there is the force of velocity. The lightest flat car weighs upwards of ten tons, the Mogul locomotive weighs one hundred fifty tons, while between these come the coach and Wagner cars, as well as loaded freight cars. These weights are augmented by a force of velocity when accidents occur, inasmuch as injuries are not inflicted upon the railway employes while cars are at a standstill; so that we must consider the minimum force active in production of injuries as being very great. In fact, we cannot comprehend the magnitude of the crushing force that ensues from an express train thundering along the steel rails at a speed of forty to fifty miles an hour, hurling its weight of thousands of tons upon and over a human body. It is more the marvel that any one so injured ever escapes with life, but many do, and the picture that such present, with mangled, twisted extremities, mixed up with bloody rubbish of the roadway and their clothing, is anything but encouraging, requiring no little nerve to attempt to preserve vitality and function in so lifeless an appearing carcass. With the coexisting complications of such cases, any one of which is frequently of a character threatening to be fatal, these injuries cannot be compared in the slightest with those ordinarilly seen in street or factory accidents.

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* Read before the New York State Medical Society, January 25, 1898.

A study of the relations between cause and effect has resulted in a much more decisive manner of treating these crushes. This class of injuries, so far as crushes to the extremities are concerned, are found to divide themselves into two distinct types, relative to the speed of the train which produced the same. Experience has taught us that a slow-moving train crushes an extremity as if it were in a vise, the damage to the parts being limited to the margins of the wound received, leaving the proximal portions vital and reparative close to the injury. On the other hand, a train going at high speed produces an injury, the appearances of which are very frequently misleading; that the tissues for a distance beyond the apparent injury are damaged to such an extent as to render them incapable of continuing their vitality, and cannot be depended upon for repair. Upon this then must we mark our lines for treating the case, inasmuch as the retention of devitalized structures in the end of an extremity would not only be followed by a more serious condition of the same locally, due to infection from this devitalized tissue, but soon make itself felt in general devitalization of the individual. The proper conception of this condition means much toward the future aspect of the case. Again, we note that injuries are also misleading through the fact that the elasticity of the skin renders it possible for an extremity to be run over by a train of cars without leaving behind any external mark, the contour remaining normal, yet all the tissues underneath the skin crushed and completely devitalized. This condition must be decided at once, and such features recognized, for if deception is permitted to come into the case, and a removal of a part whose life is already extinct not promptly done, rapid absorption of the devitalized tissues will soon reduce the case to a fatal termination.

In minor injuries also there has been much done in the practice of this special line of work which has given better results. In the less appalling injuries and crushes we have learned that we may be conservative, and we may be ultraconservative.

In practicing conservatism we almost entirely confine ourselves to the upper extremities, more particularly the hand, which is frequently the site of injury by being crushed between bumpers, many times presenting an appearance anything but encouraging, and which many would not hesitate to sacrifice at once. Experience has shown us that conservatism can be practiced here to the highest degree; that the hand is very recuperative, and that being caused by bumpers or slow train, we may use tissues that are mangled and shredded, if necessary, to make up what has been lost, and the results gratifying beyond conception in the preservation of many hands that have become useful thereafter to the individual.

On the other hand, in the lower extremity we have been taught by experience that conservatism may be carried to a degree beyond good judgment; that in crushing injuries to the foot there is but little to be gained by conservatism. A long process of treatment in the efforts to preserve the part simply does this and no more, the function of the foot too frequently lost entirely after the long battle to preserve the same. The men so injured are as a rule those of the laboring class, or those having families depending upon them, and the keeping from employment for months, and in some cases years, in the hope of regaining function in a foot or ankle, is beyond good judgment. We believe it far better, and experience has taught us the same, to do a radical operation at the first instance in cases where a crush proves to us the fact that function of the foot or ankle will not be recovered. The operations of the ankle, such as Chopart, Syme and Pirogoff, have all been relegated to the past, as the results from such amputations, in the matter of the perfect use of the lower extremity, do not warrant their performance. We have also recognized that an amputation in a joint is undesirable, from the fact that by leaving any part of the natural joint we preclude the possibility of applying an artificial articulation, with its benefits.

These are some of the most important lessons which experience has taught us in the matter of the treatment of crushes to the extremities.

Other features which come especially conspicuous before the railway surgeons are those of sepsis, the surroundings of the person when injured, and shock. While sepsis is found on the skin and clothing of all men engaged in labor, yet upon the railway are men whose skin, covered by oil, blackened by cinders and the handling of iron and rough bodies, is in a peculiar septic condition, and when receiving injuries, the force which produces such continues and grinds the sepsis directly into the fresh wound, so that we have this matter before us in an exceptional potent condition.

The feature of the surroundings is one of importance, inasmuch as upon it, many times, the question of the survival of the individual rests. In most street surgery the injured person is within a moment's call of efficient aid and comfortable and warm surroundings. Upon the railway the majority of injuries occur out on the road, perhaps miles away from any prompt, efficient aid, more frequently in inclement than in good weather, so that these conditions impose themselves at once upon the already exhausting condition of the shock and injury, tending to prolong the same and to very materially reduce the chances for recovery. Shock is a feature that is very liable to be greatly exaggerated, from the fact that we have the psychic element so prominent, as well as from the fact that the injury has been so very severe, with consequent hemorrhage and complicating conditions.

Now, what is the railway surgeon doing to ameliorate these conditions? In the west, where a large number of men are employed upon the railways, and hospital towns infrequently situated, the railway surgeon was the first to see the necessity of advising and superintending the construction of hospitals for the reception and treatment of cases of injuries upon the road. Being endowed with authority from the corporations, he organized a surgical service, placed the hospital under the skilful attentions of picked assistants, and thus at once placed such means at the disposal of the injured employe as to best ensure proper attention to his condition. These railway hospitals have gradually extended over the land, until there are many of them owned and operated exclusively by the railway corporations, under the able supervision of selected surgeons, and upon our eastern roads the system of contracting with already established hospitals in cities is adopted in lieu of the personal ownership by the corporation, the entrance into the same being free to the employe, and the attention given to the injured person assigned to the railway surgeon.

Recognizing the fact that the primary attention to wounds is all important, the railway surgeon has placed upon the roads emergency packets, each containing splints, bandages, gauzes and anodynes, placed in charge of the conductor on each and every passenger and freight train. If a doctor happens on a train when an injury occurs the packet is placed at his disposal, otherwise the primary attentions by the use of these aseptic dressings being given into the hands of the conductor and trainmen, who are instructed in their use by the surgeon holding schools of instruction at stated times, teaching them the causes of sepsis and necessities of thorough attention in the first instance to wounds. The trainmen are also instructed in the matter of transportation of the injured, so that under the present rules a severely injured person is not hustled into a car and transported miles to a hospital, but is placed in the nearest comfortable shelter, covered with blankets and stimulated to the proper degree; the surgeon sent for, who comes to the patient rather than have the patient go to the surgeon. Experience has proven that these measures have saved many lives. On several roads an ambulance car has been added to the rolling stock, which, placed at an important station, constructed so as to give operating and transportation rooms, fully equipped, and with all necessities for immediate operation, or for the proper transportation for the injured, is at all times ready to go out at a moment's notice along the road to the assistance of severely injured persons.

Aside from active service, the railway surgeon is considering many matters which he is constantly endeavoring to improve for the benefit of the profession, as well as the public at large.

The question of sanitation of cars is an important one, and means are being devised for doing this in the most satisfactory and efficient manner, well knowing the fact that the germs of disease lodging in the textures of the ordinary traveling coach, or the very certain fact of their doing so in the draperies and furnishings of the luxurious sleeping cars, prove to us the necessity of combating the baneful influences of these germs, and their being transmitted to the subsequent occupants of the same coaches. The examination of employes as to fitness for work is also one of their duties.

A very important matter which the railroad surgeons of this country are gradually settling down to a firm foundation is the question of "traumatic neurasthenia," as well as the injuries in general to the spine, which have in the past been so ambiguous, and over which so much controversy has resulted.

In conclusion, it is noted that upwards of six thousand railway surgeons are at present employed in this particular line of work, and that it demands individual consideration is no longer any question. Like all the specialties, it takes its principles from general surgery, and only in the features found in the causes of, immediate conditions of, and the treatment of the wounds received is there any deviation made from the orthodox treatment of such lesions as generally received.

The National Association of Railway Surgeons, the American Academy of Railway Surgeons, the state associations in many parts of the Union, our own State Association of one hundred members, and many local associations confined to single lines or systems, prove that the men working in this special field are progressive, and the results of the discussions of these meetings form the annals of railway surgery.

1824 FIFTH AVENUE, TROY, N. Y.

TREATMENT OF STRICTURE OF THE URETHRA BY CONTINUOUS ELASTIC DILATATION.*

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As the object of this paper is to bring to the notice of the profession a method of treating strictures of the urethra, more particularly those seated in its deeper portions, I shall not take up the time of this society by discussing either the anatomy of the urethra and the surrounding parts, nor the pathology, etiology or varieties of stricture, further than to say that all strictures, whether traumatic or the result of disease or drugs, have these points in common, viz., that their persistence and the principal difficulty encountered by the surgeon in attempting to relieve his patients, are due, either to the irritability and tendency to contraction either of the walls of the urethra of or adventitious bands, or of plastic material deposited in the parts immediately adjacent to the urethra. Any method of treatment which does not tend to promote absorption of the abnormal bands and deposits in and around the urethra, must necessarily result in many failures to relieve the patient. This, I think, is one great reason why such operations as urethrotomy and divulsion, etc., do not always give as favorable results as might be desired. Such operations merely divide the stricture and do not necessarily cause absorption, and consequently have to be followed by a course of treatment by sounds. The method of treating strictures which I am about to describe has in my hands proved very successful, has the merit of being simple in execution, and so far has proved to be free from many of the dangers of other methods in common use. It has the further advantage that the patient need not be confined to the house while under treatment; indeed, as a rule he can pursue the majority of avocations without much inconvenience. I have termed it the treatment of stricture by continuous elastic dilatation, because the principle involved in its execution consists in taking advantage of the fact that continuous elastic pressure tends to produce absorption of such tissues as are subjected to its action. This applies to the enlargement resulting from inflammatory processes, as well as to normal tissues. It can also be applied so as to cause absorption of the hardest and most resistant tissues, even bone itself, without causing material injury to the softer parts covering them. Cases are on record in which the skull has been divided, without serious injury to the soft parts covering it, by the continuous elastic pressure of such a slight rubber cord as that used by women to retain the nets to confine the hair, which were so commonly worn some years ago. Continuous elastic pressure also quickly relieves spasmodic or nervous contractions apparently by tiring out the living tissues. As the instruments used in this method are not at all complicated, and are principally composed of soft rubber, which can be very easily sterilized, abrasions are not likely to be caused, and the danger of septic infection is reduced to a minimum. The stricture is dilated and the absorption of the adventitious material caused by the continuous elastic pressure of a soft rubber catheter, which is a few sizes larger than the calibre of the stricture, being passed through it into the bladder, and being left *in situ* until it plays freely therein, when it is withdrawn, and another of a larger size takes its place, which process is repeated until the stricture is thoroughly dilated and complete absorption has taken place. I have usually found that the catheters are ready for removal in from twenty-four to forty-eight hours. Such instruments appear to occasion very little irritation, and, as far as I have observed, no inflammation. The action of such instruments appears to be of an entirely different character from that of a rigid instrument, whether metallic or otherwise. A rigid instrument will in the course of a few hours provoke a great amount of irritation, followed by inflammation, and will cause before long discharge of a purulent character. I have not seen any such results from the use of clean, soft rubber instruments. The catheters are passed by being stretched on flexible guides until they become small enough to pass through the stricture. As soon as the strain is taken off they resume their natural size, and the process of dilatation and absorption commences. For stretching the small-sized catheters, I use whalebone filaments, and for the larger sizes a flexible metallic catheter conductor. The catheter having been introduced, is at once tied in and a small plug fitted to its open end, the withdrawal of which from time to time, as occasion requires, gives the patient complete control of the bladder. As a rule, my patients are able to attend to their ordinary business, and generally come to the office to have the catheters changed. Before discharging a patient I make a rule of furnishing him with and teaching him how to pass a full-sized steel sound, and direct him to pass it once a week, cautioning him to report should he find any difficulty in its introduction. As yet I have had no relapses, and have every reason to believe that the cases are cured. I have been using this method for a number of years, during which time I have treated a large number of cases. As illustrations I shall give condensed histories of three. Case 1. — F. D., a laborer, called me July 2d, 1890, to make an incision into an abscess situated in the right groin, for the purpose, as he said, of enabling him to pass urine. He gave the following history: Something over a year before, while engaged in digging a deep ditch, the earth caved in, crushing him severely. His physician told him the pelvis was injured in front. He had to have a catheter passed to enable him to urinate, which caused him a great amount of suffering. Urine gradually began to pass through a wound in the right groin. For many months before I saw him he had passed all his urine through the opening in the groin, which kept up a constant discharge of pus. With great difficulty I succeeded in passing a fine whalebone filament into the bladder, over which I passed a small-tunnelled silver catheter of No. 2 English gauge. I then commenced the use of soft rubber instruments, after the plan I have described, and after three weeks' treatment had the satisfaction of seeing him use a No. 16 American steel sound. Until his death, a short time ago, caused by pneumonia, he had no further difficulty in voiding urine. The sinus completely healed up, and he worked as usual.

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* Read before the New York State Medical Society, January 25, 1898.

Case 2. — Was called March 17th, 1891, to see Mr. C. M., a farmer, on account of a large, painful swelling in the perineum, which proved to be an abscess, which ruptured during examination. A large quantity of pus, mixed with urine, escaped from the opening. He said that for some time he had had great difficulty and pain while micturating; had been obliged to have a catheter used occasionally, which was passed with great difficulty. Examination of the urethra revealed three contracted places in that passage, one comparatively slight, about an inch from the meatus, another about four inches, and a third which admitted a No. 4 American with difficulty in the deep urethra. Behind the deepest stricture a calculus was easily felt. The urethra was dilated with soft rubber instruments, and a number of small phosphatic calculi evacuated, some of which passed *per urethram* and some through the opening in the perineum. The opening in the perineum gradually healed, and the urethra was restored to its normal calibre. This case was somewhat protracted by the healing of the perineal abscess, so that the patient was not discharged until August, when he was given a No. 18 American sound, since which date he has had no further trouble.

Case 3. — Was called to see Mr. F. S., business man, July 25th, 1895; found him dull and stupid, and attempting to urinate every few minutes, when by straining he would suceed in passing a few drops of urine. He was evidently suffering from uræmic intoxication. He informed me that about twenty years before he had contracted a gonorrhœa, since which time he had been troubled with a stricture, which had gradually grown worse in spite of the efforts of his physicians to relieve him. Exploration of the urethra showed that there was a stricture of large calibre about two inches from the meatus, and another, which was almost impermeable, situated in the deep urethra. With great difficulty I succeeded in insinuating a fine whalebone filament into the bladder, which I tied in place. Having that for a guide, I gradually introduced others, so that on the 30th I was enabled to pass a Gouley-Thompson dilator over one of the whalebone filaments. I then succeeded in getting a No. 7 American soft rubber catheter into the bladder, and commenced the use of continuous elastic dilatation, which succeeded nicely, so that he was discharged August 31st, at which time a No. 21 American sound entered the bladder freely. I have seen the gentleman recently, and he informs me that he has had no further trouble. It will be observed that Cases 1 and 3 are such as are usually considered suitable for external urethrotomy. In both the results of gradual elastic dilatation were all that could be desired, and my patients had the advantage of not being confined to the house, but were able to go about and attend to their business.

POST-PARTUM HEMORRHAGE.*

By JOHN V. HENNESSY, M. D.,
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As the by-laws of our society require that the president shall deliver an address at the annual meeting, I offer the following remarks on "Post-Partum Hemorrhage," with reference especially to its treatment:

The truth of the saying "that there is nothing new under the sun" is certain to be forced upon the observer of medical phenomena. And of all the branches of medicine there is none in which Solomon's aphorism is so true as in obstetrics! This is doubtless because the action is generally physiological, and therefore more simple, direct and regular, than is the case in pathological processes.

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* President's address to the Albany County Medical Society, May 10, 1898.

As it is reserved for few men to present new medical facts, the only profitable course that remains for the others, when circumstances compel them to write or talk, is to repeat and emphasize certain points that are of practical value. For the following remarks, hemorrhage from lacerations of cervix or vagina will not be considered, but only that form which occurs from the placental site immediately preceding or following the expulsion of the placenta. The dreadful seriousness of severe post-partum hemorrhage was forcibly impressed upon me early in my medical life by the death of a woman from this cause.

It came so suddenly, after I had been but a few minutes at her bedside, and following what, from the short observation I could make, was a normal labor, that I have ever since felt that such an accident was liable to occur in any case.

What constitutes a serious hemorrhage, post-partum, it is impossible to say by measure. I have seen labor followed by a loss of less than half an ounce of blood, and in others a free flow of from twenty-five to thirty ounces, without any apparent inconvenience on the part of the patient. I think, however, that where there is a rapid flow of blood of more than twelve or sixteen ounces, and coincidently there is a rise in the pulse rate from 60 or 72 to 120, with pallor, sighing, respiration and anxiety, that there is a condition of excessive hemorrhage which may quickly become dangerous. Even though it goes no farther than this, it will make the patient's convalescence slow and leave a condition of anæmia from which she may not fully recover for months. It may not be amiss to add here that where the blood is bright and arterial it is more likely to be excessive and persistent.

The causes predisposing to excessive hemorrhage are general or local. The general causes are usually the result of a morbid blood state, as in nephritis, diabetes, etc. The local are generally due to the condition of the uterus, as over-distention from multiple pregnancy, hydramnios, etc., also short or entangled cord, with resulting tractions on the placenta, and precipitant labor.

Etherization of the patient seems to act as a cause, whether because of the anæsthetic or because it is most often used in abnormal or instrumental labors, I do not know, but I certainly have seen severe hemorrhage following its use in an undue proportion of cases.

When any of these predisposing causes are operative, they may be recognized, and to an extent guarded against. There is one symptom, however, often unconnected with any of the predisposing causes mentioned, the presence of which always warns me of the probability of serious hemorrhage either before or after the expulsion of the placenta, and that is a marked irregularity in the rhythm or force of the uterine contractions.

I believe the irregularity of contractions is due to partial and often very slight separation of the placenta, as I have observed in some of these cases a firm and adherent clot of blood on the margin of the placenta. In these cases the loss of blood is greatest before the expulsion of the placenta, as a rule, and the treatment should be prompt, and if necessary vigorous, to induce its removal. This is generally not a difficult matter, but I recall a case within the last year in which I had to care for a most unruly patient, with an hour-glass contraction of the uterus, retaining a partially separated placenta, with excessive hemorrhage. In this case the treatment consisted of passing the hand into the vagina, forming a cone of the fingers and thumb, and making strong and steady counterpressure over the fundus. The cone or wedge gradually overcame the contraction and removal was effected.

The treatment of hemorrhage after the expulsion of the placenta may be summarized as the administration of ergot by the mouth or hypodermically; the intra-uterine injection of hot water, vinegar or some other styptic; the placing of pieces of ice in the uterine cavity; the removal of blood clots from the uterus by the hand. The value of ergot is undoubtedly great when administered in the latter part of the second stage of labor, after it has had time to be absorbed, in producing and continuing firm uterine contractions. But in the face of a present and severe post-partum hemorrhage I hardly think that it would pay for the time lost in administering it. The injection of hot water or of vinegar is no doubt of value, but either takes time, which I believe might be much better employed.

The one means upon which I have long relied is the manual and rapid removal of retained blood clots. Since I first realized the importance of this procedure I have lost the dread of this complication. It is to the method of doing this and to what may be observed in its performance that I particularly desire to call attention.

Sometimes the uterus is flaccid and does not contract firmly, and in such cases the clots may be large and soft. More often, however, there seems to be moderately or even decidedly firm contraction. The organ is firm and small, and may be grasped in the hand, while at the same time the blood pours from the vagina. If now the uterus be firmly held in one hand and the other passed into the vagina (this is easily and quickly done after the passage of the child), the index and middle fingers enter the uterus, which at the same time is steadily crowded down by pressure on the fundus. The fingers then discover, not clots of any size, but a velvety feeling, as they sweep around the cavity. Now if a vigorous scraping by the ends of the fingers, not the nails, includes every portion of the inner surface of the uterus, and particularly the higher part of the fundus, where at this time the cavity is small and wedge-shaped, the velvety feeling will disappear and the firm, muscular wall of this organ will be distinguished.

If the hand is now withdrawn, a few small, firm shreds of blood clot will probably be brought out on the fingers. They may not in bulk be much larger than a white bean, and would easily escape notice unless looked for. Thus far I have yet to see a case in which the bleeding was not instantly checked and did not return after this treatment. If owing to a morbid blood state hemorrhage should still continue, I believe that a piece of gauze saturated with a styptic solution (vinegar being probably the best) passed into the uterus and left there for an hour would be the most promising treatment.

In every work on obstetrics great stress is rightly placed on the necessity for the removal of blood clots in post-partum hemorrhage, but I do not believe that the important part that the small shreds assume in contributing to a localized atony of the uterus and consequent loss of blood is very generally appreciated. The stimulus to firm uterine contraction produced by the grasping hand outside and the scraping fingers within no doubt is considerable, but as severe bleeding often takes place from what appears to be a firmly contracted uterus, I feel that the small shreds, spread like a film over the placental site, produce their effect by keeping open the uterine sinuses.

In closing I would remark that of all puerperal conditions requiring treatment, it is most essential that this one should be promptly met, and to do this it should be discovered in its very beginning. For this reason, during the first 20 or 30 minutes following labor the hand should be often slipped over the fundus uteri so that any undue enlargement from concealed hemorrhage may be quickly recognized. This, with some watchfulness of the pulse and of the discharge, will be a sufficient guard.

35 CLINTON AVENUE.

Editorials.

Sewage Pollution of Oyster Beds.

Through the alertness and activity of the public health authorities in various States and countries, and the tendency of the time to search out and probe into the natural and unnatural conditions of matter, it has been conclusively shown that epidemics, varying in nature and severity, could be traced directly to the pollution of oyster beds by sewage matter, and to the absorption of poisonous substances by shellfish, which have been found to be very susceptible to surrounding conditions.

Cases of cholera and tormina among a certain class in England were traced to the eating of oysters grown on the copper sheeting of a sunken ship; the symptoms produced were those of copper poisoning, which poison had undoubtedly been transmitted through the oyster. Large epidemics of cholera with frightful mortalities have been traced to the tide-washing of oyster beds by the effluent of sewers containing choleraic discharges. The epidemic of typhoid fever in Wesleyan University, at Middletown, Conn., in 1894, was traced to the eating of oysters which had been " freshened " and " fattened " at the mouth of a creek, three hundred feet from which was the mouth of a sewer carrying drainage from a house containing two cases of typhoid fever. There are also numerous reports, mostly in the *British Medical Journal*, of epidemics of typhoid, colic and severe gastro-intestinal derangements directly traceable to the eating of oysters taken from waters polluted with sewage.

Numerous living colon and typhoid bacilli have been found in oysters by Dr. Chantemesse, of Paris (*Medical Record, Oct. 31st, '96*), twenty-four hours after they were taken from the water; and according to Dr. G. E. Cartwright Wood (*British Medical Journal, Sept., '96*), "germs of cholera and typhoid fever can exist, probably, in sea water for at least two months, and remain more or less virulent and infectious in character."

It is only within the past two years that the pollution of oyster beds has received any consideration, and the causes of certain epidemics of typhoid, dysentery and cholera traced to such pollution. It cannot be doubted, therefore, that many epidemics occurring previous to that period could have had and did have their sources in polluted beds. Most of the investigations have been carried on in England and on the Continent, but during the past four years some of the United States have been called upon to investigate epidemics originating from a similar source.

Within the present year the State Board of Health has been making an extensive investigation of the alleged pollution of the oyster beds and fisheries of Jamaica Bay, off Long Island. The owners of these beds were the complainants. O. H. Landreth, consulting engineer, made the inspection, under direction of the Board, and rendered an able and comprehensive report of the existing conditions, in which he justifies the complainants in their action, and recommends "that the disposal of crude sewage into the waters of Jamaica Bay, or waters leading directly into the bay, from the village of Arverne and from the Hotel Edgemere, be prohibited." This report was adopted by the State Board and referred to the Health Board of Greater New York, within whose direct jurisdiction the territory lies, with the recommendation to take the necessary steps to abate the nuisance.

Now that the possibility of infection through the ingestion of polluted oysters, with consequent development of serious diseases, has been placed beyond a doubt, it is to the interest of the owners of oyster fields to have them free from pollution. The law, by an act of 1895, reads "that any substance injurious to oyster culture shall not be placed or allowed to run into any waters within the jurisdiction of the State." He is, therefore, protected by the law as well as governed by it, inasmuch as it protects his fields from contamination through outside sources.

It is but natural to conclude that the number of epidemics originating from infected oysters will gradually decrease; first, because the source of infection has been accurately determined; second, because the enactment of laws has furnished protection of oyster beds from pollution, and third, because the State and local health boards have the power to make investigations and to enforce the laws.

Eosinophilic Cells in Tubercular Sputum.

Teichmüller, in the *Centralblatt für innere Medicin* April 2, 1898, claims to have found eosinophilic cells in the sputa of 111 patients out of 153 patients examined, although other clinicians have stated that they were almost always absent. Their presence depends upon the general condition and the stage of the phthisis. For months before the tubercle bacilli are detected the repeated finding of eosinophilic cells indicates that the organism is making the greatest effort to overcome an infection. Finally, when the bacilli appear in the sputum, the destruction of the eosinophilic cells is clearly recognizable by their diminished number or complete absence in sputum.

When from month to month the bacilli diminish in number, the eosinophile cells maintain their position, and the patient is improving at least for the time. An increase of cells is observed after rest in the country, and later a decrease some months after a return to the old manner of living.

If at the beginning there are many bacilli and also cells present, and these latter disappear in spite of treatment, the case is one of galloping phthisis. In 42 patients in whom the cells were not found the following conditions influenced unfavorably the appearance of the cells: heredity, advanced processes, high temperature, complications and especially reduced weight.

The examination for eosinophile cells is an objective measure to determine the resistance of the patient upon which to base a prognosis and the value of special therapy. If further investigations should confirm this claim the benefits which would accrue from early treatment would be incalculable.

Obituary.

PORTEOUS C. GILBERT, M. D.

Dr. Gilbert died suddenly of pneumonia Saturday morning, June 11, 1898, at his home in Saratoga, in his fifty-eighth year. He was born at Morris, Otsego county, N. Y., and graduated from the Albany Medical College in 1863. He had a splendid war record, having been captain of Company F, Fiftieth Regiment, New York Infantry Volunteers, serving from 1861 to 1863, and afterward re-enlisting and acting as surgeon. He was a member of the G. A. R. and commander of Post McKean in 1896. He was a cultured man. He leaves a widow, mother and sister.

WILLIAM H. BAILEY, M. D.

Dr. Bailey died on June 24th, 1898, at 6 A. M., after an illness of three weeks. A fitting biographical sketch of his life will appear in the August ANNALS.

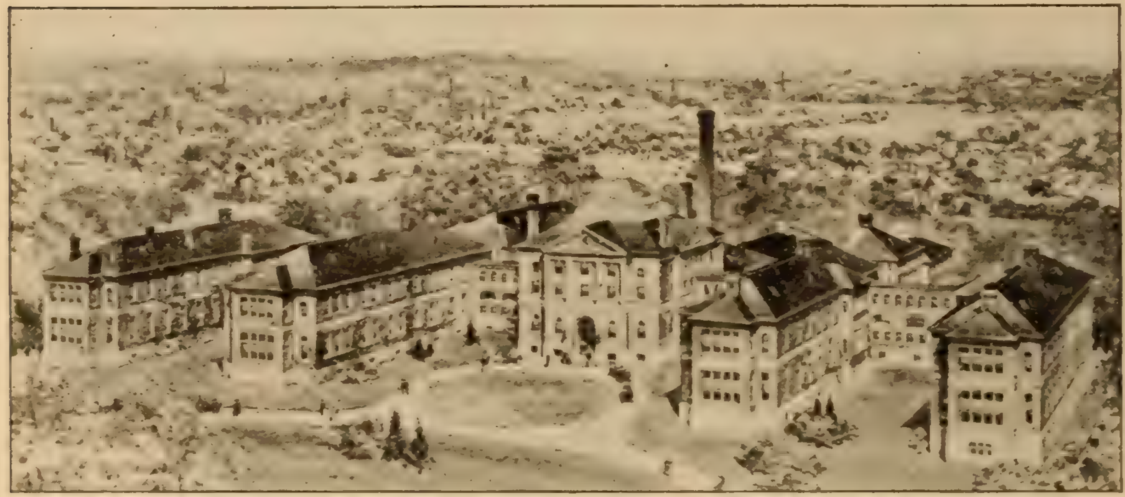
Medical News.

THE FIRST NATHAN LEWIS HATFIELD PRIZE FOR ORIGINAL RESEARCH IN MEDICINE. — The College of Physicians of Philadelphia announces through its Committee that the sum of five hundred dollars will be awarded to the author of the best essay in competition for the above prize.

Subject: "A Pathological and Clinical Study of the Thymus Gland and its Relations."

Essays must be submitted on or before January 1st, 1900. Each essay must be typewritten, designated by a motto or device, and accompanied by a sealed envelope bearing the same motto or device and containing the name and address of the author. No envelope will be opened except that which accompanies the successful essay. The Committee will return the unsuccessful essays if reclaimed by their respective writers or their agents within one year. The Committee reserve the right not to make an award if no essay submitted is considered worthy of the prize. The treatment of the subject must, in accordance with the conditions of the Trust, embody original observations or researches or original deductions. The competition shall be open to members of the medical profession and men of science in the United States. The original of the successful essay shall become the property of the College of Physicians. The trustees shall have full control of the publication of the memorial essay. It shall be published in the Transactions of the College, and also when expedient as a separate issue.

Address J. C. WILSON, M. D., *Chairman, College of Physicians,*
219 South Thirteenth Street, Philadelphia, Pa.



THE NEW ALBANY HOSPITAL.

The ceremony of laying the corner-stone of the new buildings was conducted by the Grand Lodge of Free and Accepted Masons of the State of New York, Most Worshipful William A. Sutherland, Grand Master, on the afternoon of June 23rd, 1898. The foundations of all the buildings have been erected, and upon that of the central administration building was erected a platform upon which were seated the Knights Templar, Governors of the Hospital, Patronesses of the Training School and others. Above the platform the corner-stone was suspended, and later was lowered to its place. A box of copper had been prepared to fit closely in the interior of the stone, and contained: list of Governors and Executive Committee, Building Committee, list of Patronesses, list of subscribers to the new hospital, list of endowment fund, list of trustees of the German Hospital Association, trustees of the ladies' board of the German Hospital Association, the architect's name (A. W. Fuller), the builders' names (Edmund Broderick & Son, Troy, N. Y.); a full proof set of silver and gold coin of the United States of the year 1898, daily papers, proceedings of the Grand Lodge of the State of New York for 1897, orders of masters of lodges to assemble for the purpose of laying this corner-stone, business cards of Albany firms as in existence to-day, Albany's illustrated bi-centennial, compiled by A. O. Springer; photograph of M. W. William A. Sutherland, grand master; pamphlets, histories of Albany lodges; Masonic medals, programme of the laying of the corner-stone of the Albany Hospital.

The following was the

ORDER OF EXERCISES.

PROCLAMATION, - - - - - - - - By Grand Marshal of Grand Lodge.
ORDER OF GRAND MASTER TO GRAND WARDENS.
PRAYER, - - - - - - - - - - - - - - By Grand Chaplain.
MUSIC — Hymn, - - - - "Republic," - - - - - *Peabody.*
DEPOSIT OF BOX CONTAINING MEMORIALS,
By Grand Treasurer.
READING LIST OF ARTICLES DEPOSITED IN CORNER STONE,
By Grand Secretary.
PRESENTATION OF WORKING TOOLS, - - By Brother A. W. Fuller, Architect.
LOWERING OF STONE.
MUSIC BY BAND — Paraphrase, - - "Nearer My God to Thee," - - *Reeves.*
PROVING OF STONE,
By Deputy Grand Master, Senior Grand Warden
and Junior Grand Warden.
PROCLAMATION BY GRAND MASTER, DECLARING STONE DULY LAID.
CONSECRATION OF STONE — Corn, Wine and Oil,
By Deputy Grand Master, Senior Grand Warden
and Junior Grand Warden.
INVOCATION, - - - - - - - - - - - - - - - By Grand Master.
RETURN OF TOOLS TO ARCHITECT.
ORATION, - - - - - - - - - - - - - - - - By Grand Master.
MUSIC — Melody in F, - - - - - - - - - - - - - - *Rubenstein.*
PROCLAMATION, - - - - - - - - - - - - - By Grand Marshal.
THEN WILL BE SUNG:

"Be thou O God: exalted high,
And as Thy glory fills the sky,
So let it be on earth displayed,
Till Thou art here, as there, obeyed."

BENEDICTION, - - - - - - - - - - - - - By Grand Chaplain.
MUSIC.

PERSONAL.

— The President has appointed Dr. Willis G. Macdonald (A. M. C., 1887) Brigade Surgeon with the rank of Major.

— Dr. John W. Warner, A. M. C., 1847, long a resident of New York City, has retired from practice and has taken a permanent residence at No. 19 York avenue, Saratoga Springs, N. Y.

MARRIED: ROONEY — BRADY. — At Albany, N. Y., on Wednesday, June 15, 1898, Dr. James F. Rooney (A. M. C., 1898) and Miss May Brady. Dr. and Mrs. Rooney will reside at Valatie, N. Y.

HURST — DOYLE. — At Oneonta, N. Y., on Tuesday, June 14, 1898, Dr. Frank H. Hurst (A. M. C., 1895) and Miss Clara M. Doyle.

Book Reviews.

Accident and Injury: Their Relations to Diseases of the Nervous System. By PEARCE BAILEY, A. M., M. D., Attending Physician to the Department of Correction and to the Almshouse and Incurable Hospitals; Assistant in Neurology, Columbia University; Consulting Neurologist to St. Luke's Hospital, New York City. New York: D. Appleton & Company, 1898.

Dr. Bailey's book developed from an original purpose to furnish a systematic description of the nervous conditions resulting from injury and fright, during the last few years known as the "traumatic neuroses." In planning his task it became evident that a broader conception of the subject was required, and the result has been an extensive volume of 430 pages, including an introductory portion of four chapters on the history of the patient and of the accident, and a general scheme of examination, and four parts upon the general subject.

In Part I are considered the organic effects of injury to the nervous system; in Part II the functional effects; Part III is an essay on malingering, and in Part IV is discussed briefly treatment. Interest naturally centers upon Parts II, III and IV, but not to the exclusion of the admirable synopsis of methods of procedure in the examination of nervous cases contained in the preliminary chapters, for which there is in English no other work to compare with Goldscheider's concise "Diagnostik der Nervenkrankheiten."

In Part I are considered the ultimate effects of injuries to the nervous system as related to the ætiology of epilepsy, general paralysis of the insane, locomotor ataxia, progressive muscular atrophy and paralysis agitans. In this part little has been added to existing literature, and its inclusion is apparently to be attributed to the author's conscientious purpose of meeting the obligation implied in the title of the book.

Part II is really the body of the work, and without doubt will do much toward disseminating the best and latest knowledge upon the subject of functional disorders. Since Erichsen's pioneer venture in this field views have rapidly changed, not so much because Erichsen's work was deficient, but because modern mechanical contrivances have so rapidly multiplied as to produce an entirely new class of injuries. Oppenheim's monograph on the "Traumatic Neuroses," published in 1889, represented another extreme, and since that time the ideas proposed by him have been rapidly analyzed and modified, especially by the contributions of the last two years, among which may be mentioned those of Strümpell, Jessen, Sänger, Rumpf, Nonne and Oppenheim himself. Bailey reflects this advanced thought by the recognition of the greater variety of conditions resulting from injury, by placing fright and other mental shock in their proper causative relation, and by sharp differentiation of the comparatively unimportant and infrequent occurrence of malingering. Traumatic hysteria, traumatic neurasthenia and the traumatic neuroses are shown to be distinct subdivisions of the same general class, and to these are added unclassified forms, upon which much work must yet be done. To the general practitioner, who may be called at any time to express an opinion upon cases of this kind, these distinctions will prove of great value.

In respect of litigation, it is well known and generally agreed that its influence is detrimental to the patient. It is consequently "the physician's duty to do all in his power to favor an adjustment of claim rather than have the patient run the risk of becoming a chronic invalid through the vexations and annoyances which are invariably associated with suits for damages. * * * If the claim for damages cannot be amicably settled without suit, the patient may as well decide at once between two alternatives, viz: whether he wishes to relinquish the chances of a generous verdict, or, secondly, to indefinitely postpone his recovery."

Physicians and others who need to acquaint themselves with methods of examination and with the latest accepted views of a large class of cases will get real assistance from this work. The author has not advanced any new theory, but has judicially summed up the present state of knowledge upon the subject, which is an important one, not only because of the serious pathological questions raised, but also from the financial interests so often at stake.

Modern Gynecology. A Treatise on Diseases of Women. By CHARLES H. BUSHONG, M. D., Assistant Gynecologist to the Demilt Dispensary, New York City. Second Edition, revised and enlarged. Pp 400. New York: E. B. Treat & Company, 1898.

The aim of this work is to give a simple, clear statement of the diseases peculiar to women, written to meet the needs of the general practitioner.

The author indicates plainly the methods of examination, diagnosis and treatment which every physician may be called upon and should be competent to make and carry out. The more difficult operative procedures and the ultra refinements of diagnosis which require expert training and special apparatus are disregarded entirely or referred to in a few words. He enforces the truth, too often disregarded, that this work, although not brilliant and showy, is always helpful and, at times is of incalculable value in determining at the very earliest moment the presence of malignant growths and the need of an operation before the disease due to our carelessness has gone too far.

The pathological conditions are considered symptomatically to a great extent and the directions for treatment are safe and conservative. The statement "anæmic bruit heard in the carotid arteries" shows an evident misapprehension of its origin, while "molimina menstruale" indicates a forgetfulness of the Latinic terminology. The use of the term "nerves" to express hysterical or neurasthenic conditions detracts from the high character of the work. Oxyurus for oxyuris and imperious for impervious are typographical errors which, however, are very infrequent. The work fulfills well the aim of the writer and can be recommended to those who do not specialize on this subject as a safe guide in a fruitful field which is very apt to be disregarded in larger and more pretentious volumes.

A Manual of Instruction in the Principles of Prompt Aid to the Injured, Including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A. Designed for Military and Civil Use. By ALVAH H. DOTY, M. D., Health Officer of the Port of New York; Late Major and Surgeon, Ninth Regiment, N. G. S. N. Y.; Late Attending Surgeon to Bellevue Hospital Dispensary, New York. Second Edition, Revised and Enlarged. New York: D. Appleton & Company, 1898.

This eminently practical little work has become so well known from its first edition that little in the way of added commendation is needed. The author has succeeded in the task, often difficult, of condensation without sacrifice of substance, and in twenty chapters has furnished instruction for the prompt management of accidents, in which broad term he includes contusions and wounds; hæmorrhage; fractures, dislocations and sprains; burns, scalds and frost-bite; unconsciousness, shock, collapse and syncope; concussion and compression of the brain, apoplexy, intoxication, epilepsy, hysteria and heatstroke; asphyxia and drowning; poisons and poisoning; convulsions of children, tetanus, foreign bodies in eye, ear, nose, larynx and pharynx, and bed sores. Special features of the second edition are chapters on hygiene and on transportation of the wounded, including the recently adopted drill regulations for the ambulance corps of the United States Army.

Current Medical Literature.

Suppurative Pancreatitis. — In the *Archives de Medecine Experimentale for March, 1898,* Etienne publishes an elaborate paper on the above subject. He remarks that observations on this subject are still relatively rare, only about thirty cases being found in the literature. After recounting his own case he studies the subject in a general way from a review of the reported cases.

With regard to the etiology he recognizes three ways in which the pancreas may become affected, by means of an ascending affection, by means of the blood current, and by the spread of a suppurative process from a neighboring organ. The ascending form of infection in these cases is exactly similar to the well-known ascending form in the salivary glands or in the bile passages, it may or may not be preceded by a blocking of the duct of the pancreas, and the blocking, when this occurs, may be due either to extrinsic or intrinsic causes, the latter most frequently pancreatic calculi or gall stones. The infection through the blood current generally occurs during the course of a general septicæmia, though occasionally it may follow a portal phlebitis. Infection from neighboring organs seems almost universally to have followed either gastric or duodenal ulceration.

The author divides the symptoms into those of glandular origin, those of infection, and what he calls the neighborhood symptoms. The glandular symptoms are glycosuria, stearrhœa and rapid loss of weight. The glycosuria is apparently quite rare and occurred only in about one-tenth of the cases. The author explains this on the grounds that usually only a part of the pancreas is destroyed, and that enough is left intact to carry on the functions of the organ. With the glycosuria may be other diabetic symptoms, as thirst, polyphagia and polyuria.

Stearrhœa has been only once observed, and is probably often overlooked on account of the diarrhœa which so often accompanies the disease.

Rapid loss of weight was noted in a great number of the cases, but was not invariably present, in fact some of the patients showed little or no emaciation.

By far the most common symptom of infection was fever. This was often very high, amounting to hyperthermia, and was generally quite elevated, though in a few of the cases it was low. Chills were occasionally present.

What the author calls the symptoms of neighborhood consisted of those referable to the neighboring organs. They were nausea, vomiting, hiccough, diarrhœa, constipation, tympanites, icterus, etc., The complications of the disease consisted of local complications, as the almost complete destruction of the pancreas; complications affecting the neighboring structures, as localized peritonitis, peri-pancreatitis, thrombosis of the portal vein and abscess in the liver or spleen. Occasionally general infection seems to have followed the disease.

With regard to the diagnosis little is said; it is generally made post mortem, and but few diagnoses have been made during life. Bacteriological examinations of the pus have only been made in a few instances, and the results vary; the colon bacillus seems to play an active part and the staphylococcus pyogenes aureus has also been found.

The prognosis is almost invariably bad as only two cases have survived out of the thirty. G. B.

A Case of Luetic Primary Affection of the Eyelids. — By Dr. R. Gagzow, in *Deutsche Med. Wochenschr., Feb. 10, 1898*. The author first gives a very thorough *résumé* of the literature of extra-genital infection showing how rarely the eyelids are involved. Pospelow found, in 198 extra-genital primary infections, only three of the eyelids. Sturgis, in 1646 cases of syphilis, found only six in which the eyelids were primarily infected. Prof. Samelsohn, under 107,000 cases of diseases of the eye treated in the Charity Eye Clinic in Cologne, found, with the exception of the case here described by the author, only one other case in which the infection occurred in the same place, *i. e.*, the inner corner of the eyelids. This case occurred in a child fifteen months old. Examination showed that the child in other respects was well nourished and normally developed. Left eye was entirely normal; both eyelids of the right eye were reddened, swollen and œdematous, so that there was only a small space separating the two lids; at the inner angle of the lid there was a round ulcer of about one cm. diameter, taking in the inner third of the upper lid. The edges of the ulcer were rather sharply defined. Ulcer was covered with a dirty purulent secretion. Diagnosis of syphilis was made, and the treatment consisted of iodoform bandages to the eyes with mercurial inunctions 0.59 daily. A few weeks later angina syphilitica of both tonsils developed. With the above treatment the little patient got entirely well and did not come to the clinic again. The infection in this case undoubtedly came from the father as a result of kissing the child on the eyes. When he was examined, a secondary papular syphilide was found on the mucous membrane of the right cheek and on the tongue. C. F. T.

A Recurrent Membranous Pharyngitis of Nineteen Years' Duration.— By J. M. Hunt, *Liverpool Journal of Laryngology, February, 1898.* The patient, a middle-aged, unmarried lady, had suffered from a recurrent membraneous sore throat for about eighteen years. At intervals of ten to fourteen days she had an acute sore throat, always limited to the left side, and accompanied by a membranous exudation extending over the tonsil and side of the pharynx. In one or two weeks the membrane gradually went away, but no sooner had it entirely cleared up than the whole process began again. On examining the throat, a thick, white membrane was seen, extending over the left tonsil, the posterior fold of the palate and the lateral wall of the pharynx.

The left half of the epiglottis on its posterior surface was seen to be also covered with a membrane, but the membrane here was not continuous with that in the pharynx. The author came to the conclusion that the membrane was artificially produced, and based his diagnosis on the following grounds:

1. The duration of the disease despite all forms of treatment.
2. Its cessation for three or four months when the patient was confined to bed.
3. The situation of the membrane on the left side of the pharynx and posterior surface of the epiglottis, the parts most easily reached in using a curved brush with the right hand, and
4. That the membrane on the epiglottis was not continuous with that on the pharynx. Microscopic examination of the membrane showed that it contained streptococci and staphylococci but no Lœffler bacilli.

A list of all prescriptions that had been given the patient by her regular attending physician was procured of the druggist. It was found that the patient had for twenty years renewed, at long intervals, a prescription for liquor epispasticus, which her physician remembered to have written for her some months before her throat trouble began.

The author mentions the fact that French soldiers have been known, in order to escape duty, to produce an artificial membranous sore throat, difficult to distinguish from diphtheria, by rubbing in powdered cantharides with the finger. C. F. T.

Pathology of Addison's Disease. — Mosse (*Fortschritte der Medicin, November, 1897*) shows there are four methods of studying the functions of an inaccessible internal organ: (*a*) the changes induced by extirpation of the organ in animals; (*b*) changes produced by disease of the organ; (*c*) isolation of the substances found in the organ — necessary for the body or stored up as deleterious waste products; (*d*) a combination of the last two methods. In a fatal case, extracts were carefully prepared from the diseased suprarenal capsules, the liver and the spleen. Small quantities injected into animals caused death within a few hours after symptoms of motor paralysis. The toxicity of the extract of the liver was distinctly less than that of the spleen and suprarenals. The toxicity of the suprarenals was thought to be due to the caseous material, while that of the other organs to a poison in the blood normally got rid of by the suprarenals. Similar quantities of liver and spleen extract from a case of chronic nephritis were harmless. The conclusion is that the capsules have a double function — the production of a physiologically active substance and the destruction of a poisonous one.

Practical Therapeutics.

The Local Treatment of Cutaneous Syphilis. — In the issue of the *Philadelphia Polyclinic* for the 2nd of April, 1898, Dr. Van Harlingen has an article with the above title. He says: " Attention to detail is the very essence of the successful treatment of syphilis." The aim of the article is " to say a few words from the standpoint of a dermatologist on the local management of some of the cutaneous manifestations of the affection." Syphilis is a local as well as a general affection. During the period of incubation, local treatment, except of the initial lesion, is impossible. As soon as the general eruption occurs the skin should be gotten into as healthy a condition as possible by frequent bathing with disinfectant and antiseptic soaps, and the thickened, moist patches that, when they occur in the mouth, are called mucous patches should be watched for; they often occur wherever warmth and moisture favor the maceration of the epidermis, as about the anus and the adjacent surfaces of the scrotum. There are several ways in which the virulence of these moist patches may be lessened and their cure hastened. They form a more frequent medium of contagion, especially among the innocent, and in what may be called " family syphilis," than does the initial lesion. Before making any local application the parts ought to be thoroughly cleansed by the use of hot water and an antiseptic soap, the mercury bichloride soap being the best. Silver nitrate is the best application. The solid stick is likely to hurt rather than help. Solutions are preferable. From five to fifty per cent. is used to moisten cotton, which is then applied to the surface of a moist patch. The surface should be dried just before the application is made.

Thus is formed a protective coating of coagulated albumen, which favors the cure of the lesion and renders it, for the time being, innocuous to others. Then dust on a little dithymol dioiodid or similar substance, to absorb further moisture. When such patches exist on the lips, tongue, buccal mucous membrane or tonsils, the silver nitrate is not strong enough to use. They are to be dried with rag (not cotton, because it sticks); as each lesion is dried it is to be brushed with a solution of mercury nitrate, made by mixing one part of the "liquor hydrargyri nitratis" with from ten to twenty parts of distilled water; when patches are about the roots of the teeth or on the gums, hydrogen dioxide should be freely used for cleansing. All syphilitic lesions in the mouth demand extreme cleanliness. Decayed teeth and the use of tobacco are most favorable agents for the hindrance of treatment of such lesions in the mouth. When having them, patients have carried about contagious mouth lesions for years and been all the time a menace to all persons around them.

The lesions which belong to the middle period of the development of syphilis, crusts on the scalp, line of papules on the forhead, etc., ought to be treated. Ointments containing mercurial salts may be applied to them advantageously. The classical yellow ointment is of the worst of those used. Solutions of one to ten per cent. of mercuric chloride, in alcohol or collodion, are best to use when cosmetics are worthy of regard. When weak, such solutions may be entrusted to the patients themselves.

In the earlier period of generalized syphilis, local treatment aids in the cure and also to prevent the spread of the disease. In the middle period. the local treatment is to cure and also to remove as soon as possible the unsightly blemishes of that period. In the tertiary stage, local treatment is used, not merely as an adjuvant but often to cure various of its manifestations. Such symptomatic appearances not only simulate worse eruptions, due to other causes, but their transformation into epitheliomata is not excessively rare and some foreign syphilographers say that they have, in a few cases, become lupus. When the usual symptoms of inflammation are present in cases of eruptions, due to syphilis, it is worse than useless to treat them by the usual antisyphilitics alone, since they then often harm rather than help.

It is better to postpone all specific treatment and use sedative lotions and mild, appropriate general treatment at first, and then, when the acute symptoms have been relieved, we may return to specific treatment with far better hope of success. Suppurative syphilitic lesions should be combated from the beginning. Abscesses should be opened and cleansed as soon as discovered, rupial and other crusts and debris eliminated, ulcers kept thoroughly cleansed and as nearly as possible complete antisepsis carried out.

With due attention to local treatment, treatment of this disease may be prosecuted with the certainty of quicker and more satisfactory results than when a routine administration of mercury and potassium iodide is trusted to cure.

C. M. C.

VOL. XIX AUGUST, 1898 NO. 8

ALBANY MEDICAL ANNALS

Original Communications.

THE PUBLIC MILK SUPPLY.*

BY O. W. PECK, A. M., M. D.,

Health Officer of the Town and Village of Oneonta, N. Y., Senior Member of Committee on Hygiene of Medical Society of the State of New York.

Milk is such a large factor in the living of some families, and such a prime one during the early period of life, that its production and care are worthy of the most earnest thought. It has often been said that next in importance to the water is the milk supply. I am not at all certain that it should be made secondary.

When first drawn from the udder of a healthy, properly fed animal, cow's milk is a white, alkaline secretion, fit for ingestion into the stomach of any mammal. Upon exposure to the atmosphere it is immediately attacked by the germs of fermentation, and acidity occurs almost simultaneously therewith. Germs of any and every kind, if present and favorably situated, either in the air, upon the animal, the milker or the utensils, will find a lodgment in the milk. Hence the whole subject of milk, not only the proper handling of it, but its production and the dangers which may result from improper management all along the line, presents a subject for study at once interesting and vital. The subject in all its aspects is so large that to enter upon a thorough and critical study of it would require more time than either the writer or many of his auditors would feel disposed to devote to it. Nevertheless, in the rush and hurry of life it often pays to take the time to listen to and consider certain facts.

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* Read at the Annual Meeting of the Medical Society of Otsego County, N. Y., held at Cooperstown, May 24, 1898.

Here are a few worthy of consideration: In 1890 the number of cows in the United States was 15,952,883, of which 1,152,373 were owned in this State, each yielding an average of 450 gallons a year, or a total of 6,750,000,000 gallons. Only 5% of this total was used as butter and cheese, leaving 95% to be used as milk in the natural state. This I state as fact first.

Fact second is that tuberculosis exists to an alarming extent among dairy cattle. Statistics gathered in this country, in various parts of Europe, Canada and Mexico, vary from 4% to 34% per one thousand. When our own State Board of Health, in 1893, undertook the inspection of herds upon the request of owners, the disease was found to be so prevalent that, upon the convening of the next Legislature, the inspection was, it is believed, upon the representations of those interested in the breeding of blooded or fancy stock, discontinued. (A man of letters remarked to the writer, that so long as the value of a cow was regarded as of more value than the life of an individual, so long would the systematic inspection of dairy cattle for tuberculosis be discontinued.)

Fact third is that about one-seventh, in round numbers, of all the deaths occurring in the United States (and Canada and Mexico, may be included) are from consumption. For a number of years between twelve and thirteen thousand deaths have occurred annually in the State of New York from this cause. The number last year (1897) was 12,641. In these facts I trace cause and effect.

If this insidious, steadily working, ever flattering, yet practically ever fatal disease came upon us and claimed its quota of victims every year like certain epidemic diseases, in a short period of time, the community would be aroused and every effort would be made to stamp it out. Only by an enlightened public opinion can our legislators — assemblies of elected politicians — be made to provide the means for stamping out this fell destroyer. To them we must look to furnish the means for regular, systematic inspection, for no other method will be of avail to wholly eradicate the disease in our dairies. Irregular, spasmodic, neighborhood inspection will avail but little.

As it is, the politician, ignorant for the most part, doubtless, of the fearful ravages made among his constituents and possibly in his own family by the consumptive cow, goes on trading his vote with his brother politician for some paltry local measure or to purchase his influence to secure for himself or some constituent some office with its emoluments, while if remonstrated with by the medical profession, either individually or collectively, or by his thoughtful constituents, he puts a quietus upon them by frightening them with the expense which would attend such a destruction as would necessarily result from the slaughtering of so many valuable cattle, while perchance he votes next day to turn a few million dollars into the canal. Meantime the breeder rears and sells with profit fresh animals to disseminate the disease.

For some years I have, in the capacity of health officer, inspected annually or oftener the dairies furnishing the village of Oneonta with milk, and have made the subject a study. Whether owing to such visitations or not, I can say, and am happy to be able to, that improvement in methods is noticeable. Whether I have been able to impart any information to them or not, I am free to acknowledge that I have received much valuable information from the dairymen. My professional visits to them are, perhaps, the most pleasant of my official duties. They have always, apparently, been well received, and a disposition has in most instances been manifested to do anything reasonable and that could conveniently or without too much outlay of money be done to improve upon present methods. A great difference in the housing and care of stock in different dairies is noticed. Often the dairyman begins in a small way with limited capital, and is obliged to put up with inconveniences and lack of facilities until he realizes sufficient profit to obtain them. Not a few cows are crowded into imperfectly lighted and ill-ventilated stables. Many stables are modern in arrangement, yet I have not found a dairyman who would say that he kept or knew of a really "up-to-date" stable, that is, where all the stable arrangements and the handling of the milk in all its details are conducted in accordance with modern advanced ideas. Some of our dairymen would thus arrange their stables and handle their milk if all were compelled to do it. As one of our progressive dairymen said to the writer, in effect: "What is the use of my spending time and money in keeping my stable and cows clean, when my neighbor never cleans his cows and his stable but seldom?"

In a paper of this kind it will, I think, be most profitable to confine myself, for the most part at least, to two phases of the subject, to wit, (*a*) the proper care of stables and the handling of milk, and (*b*) its relation to the health of the community. And I may say here that I have no thought of writing exhaustively upon either phase of the subject, only to outline them, believing that such presentation will be sufficient for my purpose and secure attention better than an attempt to completely cover the ground.

CARE OF STABLES AND MILK.

Stables should be light, well ventilated, yet warm and dry. Sunlight and fresh air are not only conducive to the health of the cows, but are potent factors in the destruction of germs. Darkness and dampness, on the other hand, predispose to ill-health and furnish, in part at least, the conditions favorable to the growth of germs of every description. Hence stables which are either dark, damp or unventilated are unwholesome. A close, unventilated stable, reeking with the odors from the urinal secretions and fecal discharges, can but be an ideal tuberculosis nursery. Cleanliness is the *sine qua non* in the stable as well as all along the line in the handling of milk.

Cows should be groomed daily. They should be kept as free from dust as possible. Manure should not be allowed to collect and dry upon their thighs and legs. We do not forget that there is an individuality in cows, that some are naturally more cleanly than others; nevertheless cows should be kept clean. Manure should be removed from the stables at least daily. Stables should be whitewashed every two or three months while occupied, and a solution of chloride of lime mixed with the whitewash is a good addition. One pound of chloride of lime to five gallons of water is sufficiently strong. Land plaster or gypsum is a good absorbent to sprinkle in the trenches. No animals of any other species should be kept in the same stable with the dairy. They are subject to too many diseases. It is quite common to keep horses in the same stable with the cows, yet they are subject to the "distemper," epizootic and other diseases, not to mention glanders. Hogs are to some extent kept in close proximity to the dairy, the pens in some instances adjoining the cows' stalls or stanchions. Hogs are even more prone to disease than the horse, and the sty, as furnishing a nidus for harmful germs, as well as a polluter of the atmosphere, has, I believe, few equals and no superiors. Banish *all* animals from the cow stable. Give Bossy a clean, sweet home.

There are other sources of danger besides animals in the stable. We refer to the attendants. No persons not in health should be permitted about the dairy, particularly if they have sores upon their hands, abnormal discharges from their body, sore throat or a cough. Expectoration and defæcation in the stable should be prohibited. Before milking the milker should wash his hands, clean his finger nails, and still farther, should put on a clean frock or clean overalls and jacket. Before milking the udder of the cow should be well brushed at least, and not into the pail, and were it not for the danger in the winter months of causing the teats to crack, it would be well to wash it.

We have written the foregoing with a full and realizing sense that many milkmen and not a few others will conscientiously ridicule it and regard it as foolishness in the extreme. A few years ago not a few things now of almost universal use about the dairy, and practices now so common as to occasion no remark, were regarded in the same way. There are reasons, and *good* reasons, why *all* the precautions indicated should be observed, but I have not time to go over them. In a recent inspection of dairies — some twenty in number — I found but one where it was admitted to be a practice for the milkers to wash their hands immediately before milking. There may be others among the number visited who do, yet I feel confident that it is not a common practice. As a rule they come to the milking with clothes dusty from the field, or perhaps from cleaning the horses, with the dust from them on both hands and clothes; from cleaning stables; from attending to the calls of nature or from doing anything in fact. A dirty milker is a dangerous factor in the milk problem. I came across not long ago in my reading the following:

"The laws of Roumania, half-civilized Roumania, provide that the udder of the cow be washed before milking is begun, and that the milkers shall wear clean clothes and shall wash their hands before they begin."

Wetting the fingers in the milk from time to time while milking, in order to lubricate the teats, is a filthy custom, not so much practiced as formerly.

No utensils for containing milk should be permitted to remain in the stable one moment longer than is necessary. Before taking the pail into the stable it should be wiped, the inside of it, by the milker, with a clean cloth wrung dry, at least so that it will not drip, from a one one-thousandth solution of corrosive sublimate. This would sterilize both his hands and the pail. Cans into which milk is put for transportation should be treated the same way. Milk should be taken out of the stable as soon as milked, the farther the better. It should not be cooled in the stable. It should be strained and chilled as soon as possible. All cloth strainers should be thoroughly boiled in water after each milking. Drinking out of the pail or dipper is a reprehensible practice, yet I have seen it done.

About two-thirds of the milk supply of Oneonta is now delivered in bottles. It is but a few years since they were introduced, yet they have won their way into popular favor, and rightly, for it is the more cleanly way of delivering milk. Dipping from the can is not always cleanly done, the glove or mitten of the milkman is not always clean, even though washed more or less with the milk in dipping. Another practice sometimes indulged in by dipping milkmen is to sell a drink of milk, using the inverted cover of the can as a receptacle. Out of this same cover I have seen milk poured into the pail or pitcher of an unsuspecting customer. Again, the can is necessarily open more or less, and is picking up dust — possibly a spatter of mud — and fermentative germs are attacking it. The result is danger of being less clean and remaining sweet for a shorter time. With few exceptions dealers clean their own bottles. They thus know that they *are* clean. A clean bottle is a necessity, otherwise the milk would sour. Handled in this way the number of germs and odors taken up in the milk is reduced to the minimum. The chilling retards their activity. Hence the milk will keep sweet longer. The principal germs, those which seem to be everywhere present to attack milk, are the fermentative germs, sometimes called bacteria — bacillus, coccus, spirillum, are but different kinds of bacteria — microzymes.

Milk either in cans or bottles should be kept cool, say at a temperature of 40 to 45 degrees F., or thereabouts, until delivered to the customer. This cannot be done in hot weather if the receptacles are exposed to the heat of the sun. A milkman's route should be finished by 10 o'clock in the morning during the hot season. The general appearance of the milkman and his "outfit," wagon, cans, etc., as to cleanliness, is to a considerable extent an index of what may be expected to be found about his dairy. A man delivering milk wearing dirty overalls, with a pipe or cigar in his mouth, does not impress one favorably. The principal factor in the whole line of handling milk from the pail to the consumer is cleanliness. There are other factors, as temperature, but the *principal* one is cleanliness.

THE DAIRY AND ITS RELATION TO THE PUBLIC HEALTH.

The relation of the dairy to the public health is a subject too large to be fully gone into in this paper. Some of the dangers to the public health from unhygienic stables and improper handling of milk have already been shown. It remains, however, to make mention of certain diseases to which the cow is subject, and which render her milk unfit for food even though it may not in every instance convey the specific disease from which the cow is suffering to the consumer.

Drs. Busey and Kober, of Washington, D. C., in a paper entitled *Morbific and Infectious Milk*, published as a part of the report of the Health Officer of the District of Columbia, enumerate the following: garget, gastro-enteric diseases, acute specific enteritis, puerperal and other septic fevers, foot and mouth disease, cowpox, anthrax, pleuro-pneumonia, rabies, tetanus and tuberculosis. The number of cattle affected with diseases other than the latter is comparatively small. While they are, some of them, epidemic and contagious, they can be stamped out with comparative ease.

Not so, however, with tuberculosis. The disease is widespread. No systematic inspection with a view of determining with accuracy the extent to which it prevails in the dairy has been made. Desultory work has been done pretty much all over the civilized world, and observations have been undertaken and carried out with more or less completeness at abattoirs with greatly varying results. Much depends upon the constitutional tendencies of different breeds. It may be said that the more delicate and thin-skinned breeds, those most susceptible to atmospheric changes and unsanitary surroundings, are the most prone to the disease. No breed is, however, entirely exempt. The tendency is, however, more marked in delicate cattle than in those of a hardy and vigorous type. It is said upon good authority that 34% of the animals slaughtered for food in Mexico are found to be tuberculous. The Board of Health of the State of New York made, in 1893, under skilled veterinarians, an examination of 166 herds, located in thirty-one counties, from Suffolk to Erie, and a herd not found to be tuberculous was the exception. In fact, a very large majority of the cows tested were found to be tuberculous. It is the practice of dairymen when a cow ceases to " do well " to send her to the slaughter. What the butcher finds the public never knows. When slaughtered the disease is often wholly in the glandular system, and would quite likely be unobserved, and if observed its character would be unrecognized. As before stated, about one-seventh of all deaths are from tuberculosis. Tuberculosis in cattle and in the human subject are identical diseases. Instances almost without number have been recorded where the disease has been contracted by the human subject from tuberculous milk. Some have endeavored to show that unless the disease in the cow was " generalized," if the udder was not involved, the milk was without danger. Who is to tell when the disease is " generalized? " Drs. Smith and Kilbourne (Bureau of Animal Industry, Agricultural Department, Washington, D. C.) found the milk infected in three cows out of six with apparently sound udders. I claim, in view of the fact that tuberculosis is known to be so prevalent among the bovine race, that raw, uncooked milk, taken from cows untested within a year. is an unsafe article of food. It can only be rendered safe by heating to a sufficiently high temperature to destroy the pathogenic or disease-producing germs which are in it. Absolutely sterilized milk is boiled milk, and boiling changes to some extent its character. The constituents are, to a degree at least, changed not only in themselves but in their relation to each other, as is witnessed by the scum which rises on the top of a pan of boiling milk. This is coagulated albumen, a trace of albumen being a constituent of normal cow's milk.

To destroy most, perhaps all, disease-producing germs, certainly the tubercle bacillus, a temperature of from 165° to 170° F. is sufficient. Milk brought to this temperature and held there from thirty to forty minutes is called Pasteurized milk. Milk treated in this manner or even boiled will not destroy either toxins or rid it of any impurities like filth from the stables. Pasteurized milk differs but slightly in taste from normal milk, and while by the process, as has been indicated, not free from toxins and filth, if unfortunately the milk contained them, it is practically safe milk. Kept cool and excluded from the air, it will keep sweet indefinitely.

All physicians, and in fact most of the laity, nowadays understand the value of Pasteurized milk in the feeding of infants. The diarrhœal diseases of infants, formerly so frequent and fatal, doubtless in many instances tuberculosis of the mesenteric glands, masquerading under the name of cholera infantum, are no longer dreaded. Cholera infantum is seen but rarely in mortality tables as compared with its former frequency. The reduction of infant mortality among the poor of New York City and Brooklyn through the efforts of Nathan Straus, the philanthropist, in furnishing Pasteurized milk to the poor gratuitously or at cost, has been most marked, and this in the face of squalor, filth and most unhygienic surroundings generally.

A paper upon the relations of the dairy to the public health would be most incomplete did it not make mention of dangers arising outside of the cow, and for which at most she is but indirectly responsible. As has been mentioned, sick animals about the dairy are a menace. So also is a sick attendant or milker. A person who handles a sick horse or other animal has no business to milk or handle any product of the dairy in any way. Cats have a disease undistinguishable from diphtheria, and yet they too often embrace an opportunity to lap from the pail. Rats and mice often infest the dairy. They are subject to disease. Poultry are everywhere, and their feet and bills are in every conceivable place, in the stable, the milk-house, even sitting on the edge of a forty-quart milk can. They are not cleanly and they are subject to tuberculosis.

Listen to what Dr. E. F. Brush, of Mount Vernon, N. Y., an eminent authority, says about dogs in the dairy: " Dogs prowl about the farm day and night, and very often depend upon the carcasses of dead animals for their living. Cows, horses and pigs often die of septic and contagious diseases; the carcasses are hauled into the woods or fields, away from the house, and there left exposed as meat for the farmers' dogs. These dogs come back and lap the milk from the pail, lick the empty milk vessels, etc."

We should be loth to believe that dogs were afforded an opportunity among even the most careless dairymen in Oneonta to lap milk from the pail. We have, however, witnessed a dog urinate with startling nearness to the inside of a pail. The fact is, the dairyman's dog, often a most useful animal, is a source of danger to his customers. Better banish animals and fowls from the dairy if the desire is to reduce danger to the minimum.

Many epidemics of typhoid fever, scarlet fever and measles have been traced to the dairy. Unexplained septic troubles could doubtless be truthfully charged to the same source. The water supply used for cleaning the cans should be cared for with scrupulous care. Where typhoid fever has been traced to the dairy it has usually been found that the water supply has been polluted, either by the family, attendants or animals. Steam under pressure will sterilize anything. Hence, cans and utensils thoroughly cleaned and then subjected to a jet of live steam for several minutes can contain nothing pathogenic, and are safe.

The present style of milk ticket is a source of danger, real, not imaginary. Tickets are purchased by people in all walks and conditions in life. The cleanly and filthy, the sick and the well.

The tickets you purchase this morning may have been in a sick baby's mouth yesterday, or handled by its besmeared fingers, for milk tickets are not unknown to the writer as babies' playthings. Some of the tickets may have lain upon the shelf in the sick-room during an entire course of malignant diphtheria or scarlet fever. Tickets often stick together by reason of something tenacious applied to them. Often in separating the coloring matter is torn off. Did it ever occur to you that the material which caused the tickets to stick together was the tenacious sputum of some poor consumptive or some other tenacious material even more repulsive to the thought, if possible? The safer way is for each family to have its own tickets, and to use them but once. The coupon ticket used by some milkmen — each coupon used but once — is all right if assured of its cleanliness before it comes into your possession. It is wise, perhaps, not to leave bottles with a family where contagious disease exists. The danger, however, of contagion clinging to a scalded flint-glass bottle is so small as to be hardly worth considering. However, to be on the safe side of the question, milkmen should empty bottles into receptacles placed outside the door.

As was said at the commencement of this paper, the subject of the public milk supply and its relations to the public health is too large a one to treat critically and exhaustively in a paper of this kind. Only certain lines have been followed out, and they not as perfectly and completely as I could wish, yet enough has been written to show the importance of the subject, and I trust so presented as to awaken an interest in this most interesting and vital problem, the public milk supply.

DETAILS OF ELECTIVE OPERATIONS.*

BY DOUGLAS C. MORIARTA, M. D.,

Saratoga Springs, N. Y.

These procedures are of such moment and so far-reaching in their effects, not only to the patient because it may mean his or her life, but also to the operator, as his reputation and comfort may be in jeopardy; either result would be sufficient reason for presenting a review of the subject for your consideration. I cannot hope to offer anything new, as they are merely the accepted principles of to-day.

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* Read before the Saratoga Medical Society, November, 1897.

Those of you who have such or similar schemes as I shall present, I beg your indulgence; while those who have not will find an outline which may be of some service when preparing for an operation; certainly they do save time. The several disappointments and many annoying delays I have experienced when I thought every detail was perfect for an operation is my excuse for the several lists I present. The ideas are not my own, but are drawn from those of others, modified and revised to meet my requirements. It is so easy for us all to omit some little aseptic precaution, and so break the technique in some manner when at an operation, either in the process of sterilization of towels, gowns, gauze, sutures, instruments, etc., or in some one being thoughtless or careless in cleaning up — perhaps some assistant who is not quite ready and so hurries the process; or there is carelessness in handling non-aseptic substances; or in the natural desire to hurry the operation after the patient is anæsthetized, or there may be some neglect or lack of thoroughness in cleaning the field of operation. Any one of these is sufficient to break the technique and terminate in the much-dreaded sepsis.

I am sure you will all agree with me that "a chain is no stronger than its weakest link;" so with aseptic details. The operator and all but one assistant may scrub until they are exhausted; when the last one to assist arrives (late many times), and after a careless hurried wash is ready not only to infect the patient, but to drag the carefully prepared operation down to his degree of cleanliness. If an operator is so situated that he can rely on each one of his assistants and share with them the responsibility, his work is much easier.

I am a firm believer that we must not only know asepsis, but believe thoroughly in its every detail, and possess aseptic consciences. I have seen many times, as have you all, those who know, careless in little things, which are not given a thought until afterward, when we are looking for the cause of sepsis in the case. If we hope for perfect results we must insure perfect conditions; continuous success must be the result of scientific accuracy and attention to detail. I say continuous, because that is the only test; and one must not be misled by occasional brilliant results under imperfect or careless technique.

If one is to operate, the first thing to be considered after the consent of the patient is the nurse; she should be a capable, truthful, conscientious individual, properly trained in asepsis; otherwise the aseptic details are uncertain, the operation is delayed, and many times, I feel sure, infection occurs. When it does occur one never knows where it will end. If one is fortunate in having such a nurse at command, with the aseptic conscience before mentioned, as well as a knowledge of the details of an aseptic procedure, then much of the anxiety and a great deal of the risk are avoided. If such a nurse is not at hand, then I attend to the details myself. While every detail in surgery must be correct in order to insure asepsis, in operations involving the peritoneum we must be doubly watchful; for here we cannot use, as we often can elsewhere, antiseptics.

I have memorandum which I copy and give the nurse, or use myself as a check, which I expect to cover all requirements of the operation. These, as well as the various memoranda of instruments, I will not detain you with as they are a matter of election.

The most essential detail apart from asepsis, is the assistants; and while one's immediate assistant is an aid in proportion to his experience, judgment and acuteness, the anæsthetizer is equally important. Were I to chose between a less competent one in either place, I would prefer the lack of experience in the immediate assistant. For I am sure that the vitality, and so the chance of recovery, of the patient may be decidedly affected by being flooded with an unnecessary amount of anæsthetic.

Again when the patients are being put under the anæsthetic they often cough and strangle; then the cone is removed admitting more air, with the result of a longer and more intense period of excitement. One carefully trained simply lifts the angle of the jaw forward, keeping the cone firmly in place, thus relieving the complication and placing the patient completely under the anæsthetic in a very few moments.

You will agree with me that those of us who are doing a general practice must be continually exposed to septic infection; consequently the danger of sepsis with us in an operation is greater than with those who do only special work, and whose assistants practically very little else. Because of this, we must be all the more careful in our cleansing process. A thorough scrubbing of the hands and forearms with plenty of water and green soap, after carefully preparing one's nails, is a good beginning; personally, I like to use spirits of turpentine before scrubbing with soap. Then, after thoroughly rinsing, use bichloride, after this the permanganate and oxalic acid solutions, and lastly the sterile water. I myself believe there is just reason in using the permanganate and oxalic acid solutions beside the high endorsement which they have. To clean up properly requires care and time.

The instruments can be made certain by boiling for fifteen minutes at the time of the operation in a soda solution of 1%.

The pitchers, bowls and instrument trays must be carefully washed in bichloride solution; or, better, have a large natural-wood tub with bichloride solution and immerse them, then rinsing if desired in sterile water. Personally, I have a nest of basins and trays which I sterilize, then rinse as above, and they are safe I believe.

The bottles are either boiled or sterilized by the nurse and then filled with sterile water, salt solution, and bichloride, all carefully corked with cotton.

The solutions must be made only in the cleaned, and, if possible, carefully boiled pitchers.

The gauze, sponges, towels and gowns are all carefully sterilized; the gauze for sponges I prepare by fractional sterilization with 25 lbs. live steam for 6 hours, 3 hours the first day, 2 hours the second day, and 1 hour the third day; the gowns and towels in an ordinary steam sterilizer, but without pressure, for the same length of time. I have relied on the method without pressure, unless in some previous septic case they may have been exposed to infection. In that case, they are put through the steam pressure sterilizer, before this having been all thoroughly boiled, dried and ironed.

My gauze for dressings is prepared the same as the gauze for mops; then put in a towel with cotton and bandages, carefully pinned and then subjected to the fractional sterilization. Iodoform gauze is made from gauze sterilized under pressure as above, with sterile water, and placed in sterile tubes plugged with cotton; after it is in tubes it is not resterilized, as iodoform is sure to be decomposed.

Reef sponges are seldom used, but occasionally are of service and are prepared after the permanganate method. They are pounded free from dust, then allowed to stand in a 2% solution of muriatic acid for 24 hours; after this they are carefully rinsed and placed in a solution of permanganate of potash, then in a solution of oxalic acid, again thoroughly rinsed, placed in sterile water, and then into a solution of bichloride for 12 hours; from this they are removed, rinsed and placed in carbolic solution. After they go into the permanganate, they are only handled with sterile hands.

Sutures and ligatures have received as much or more thought and study, and caused more anxiety since the beginning of aseptic surgery than any other one thing; I refer, of course, to the animal suture. Catgut is the ideal ligature, as well as suture, if its life is equal to the requirements of the operator. It can be made to last much longer than its natural life by hardening agents, such as bichloride of potash, bichloride of mercury, or, latterly, formaline. There are a good many firms making and placing on the market sutures of all kinds; but I am a believer in, and advocate of, home-made ones, if they are sterile when finished. With this I feel much more comfortable when the operation is done. The animal sutures are often a fertile source of infection and too much care cannot be used in their preparation. It is very hard for me to exercise the necessary precautions for a short time in these procedures; and it must be proportionately harder for an employe to do so all day long, day after day, when he has not a personal interest, nor any knowledge of the absolute necessity of every detail.

In preparing catgut, about everything has been tried, from juniper oil to formaline; at present there are several methods in use. Perhaps the most common one is boiling the catgut in alcohol for several hours, it having been previously soaked in ether for 24 hours to remove the fat. This is very easily done by using a glass worm prepared for the purpose as a condenser of the vapor. I do not know who is the originator of the little apparatus I show you, but Dr. Hodgman first saw it at the New York hospital. With it you can boil the catgut for 24 hours and not lose two ounces of alcohol. Thus it is made as safe as 175° F. of heat will make it; we all know, however, that such an amount of heat is not enough to destroy all bacteria and spores.

Dr. Lilienthal, in his little book, *Surgical Hints*, says they find it satisfactory at Mt. Sinai Hospital to treat it as follows: Put the catgut in jars of ether for six hours; then into a 10% carbolic acid solution; in alcohol from 6 to 24 hours, governed by size of material, and finally preserving in pure alcohol.

The formaline methods are quite numerous as presented by the many extensive operators; that of Dr. Stone, of Washington, as published in the *Journal of the American Medical Association* of April 24, is simple and easy of preparation, and has strong recommendations. He first places it in water for 12 hours to swell it, then into a 5% solution of formaline (40% strength) for 24 to 36 hours; it is then preserved in alcohol. I show you some sutures that were prepared with formaline gas without soaking; they were in the wound 24 days, and are very firm still.

The method that has appealed to me most strongly is the Kronig cumol method, as modified by Drs. Clark and Miller. They keep the catgut at 330 degrees for one hour; then it is dried and preserved in sterile tubes indefinitely. They show an elaborate series of experiments; first having made the catgut septic with the most virulent pathogenic bacteria by inoculating it in the culture for hours, then putting it through their process and finding it sterile by actual clinical demonstration, while the septic condition was demonstrated in that infected which was not subjected to the process.

It is necessary that whatever method is employed be thorough and sure; for while many times the catgut is not septic, another lot may be decidedly so, and hence a very certain method is required.

In following this cumol method a little experience is an advantage. The gut should be carefully dried at 80 C. for an hour to drive off the moisture; then put into cumol not over 100 C., raised gradually to 165 C., and maintained at that temperature for one hour. Remove from cumol, dry for two hours at 80 C., and place in sterile tubes. My personal observation* of its use after being submitted to this method is small; but no bacteria or spores can stand a temperature of 330° F. for an hour. Those who have used it are certainly men of extensive operative experience and good judgment.

There are a few points to be remembered if one is going to prepare it after the cumol method:

1. Thoroughly dry the catgut at 80 C. or it will be a brittle product.
2. Cumol must not be over 100 C. when catgut is added.
3. Cover beaker on bottom and sides with gauze to protect catgut from injury.
4. Purchase only C. P. cumol, as other commercial sorts have a much lower boiling point.
5. Observe caution in not igniting the cumol, which, while not combustible, is very inflammable; the top of the beaker requires a piece of copper wire netting to prevent igniting. Make the netting cone-shaped, apex down, and the condensed cumol will drip back into the beaker.

I found on trial that a galvanized iron disk with a hole in the center used as a cover for my sand bath was a very great help in raising the temperature. This disk I covered on both sides with asbestos paper, which makes it a much more safe procedure.

Silk is wound on glass spools, either in one piece or in definite lengths, boiled for an hour and then carefully placed in sterile tubes plugged with cotton. It then undergoes the fractional sterilization process, and is finally dried thoroughly to prevent rotting.

Silkworm gut can be conveniently prepared by wrapping in a piece of gauze and boiling with the instruments; or it can be previously boiled, placed in sterile tubes and dried.

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* Since reading this article I have used cat gut after this method continuously and am sure there has not been any infection from it.

Silver wire can be sterilized by boiling with the instruments.

Brushes for scrubbing are boiled thoroughly each time.

Last, but not least, is the field of operation which must receive its final cleaning on the operating table, unless one has an exceptionally careful and well-trained nurse or assistant. As a rule I like to commence with thoroughly scrubbing with green soap (if permissible); then ether, alcohol and bichloride solution in turn. No one, not even the operator himself (unless he attends to all the work), realizes how much labor is involved, nor how difficult it is to attend to all these minor details and have them perfectly aseptic throughout. The work is not only exacting, but extremely tedious; and while any one can do this work, yet I am sure that unless they are fond of such work, or else know that the success of the operation is at stake, they will either be indifferent, or else not attend to it at all, but purchase supplies outright — perhaps that is for them the better way.

With each surgical procedure, no matter how trivial, the entire technique should be equally perfect; and we must expect part of our compensation in the satisfaction of repeated aseptic results, which must surely follow such a technique.

ERYSIPELAS NEONATORUM, COMPLICATED BY ACUTE PERITONITIS.*

BY WILLIAM J. WANSBORO, M. D.

The occurrence of erysipelas in the new-born is happily so very rare that the report of one case may prove somewhat interesting, even though its value as a contribution be limited. Knowing as we do the importance of asepsis and antisepsis in obstetric practice, combined with our knowledge of the etiology of puerperal diseases, it does seem criminal that a mother or her babe should die through the negligence of the physician or the nurse. There are occasions, however, when a physician is not engaged and the management of the case devolves on some near friend of the puerpera. These are the occasions which present most of our ophthalmiæ, erysipelates, sepses and other infectious diseases which fortunately seldom occur even when negligence is plainly stamped on the commissions or omissions of the accoucheur.

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* Read before the Albany County Medical Society April 13, 1898.

That the case which is about to be reported was due to ignorance and negligence seems morally certain. And like many other infections, its direct source could not be successfully traced.

At the time of my first visit, in September last, the patient, C. H., female, was nine days old. A member of the family who came with the message volunteered the information that the baby had wind colic.

Family History. — All of the other children, four in number, have had convulsions prior to their third year. Otherwise there is nothing which has any bearing on or relation to present condition.

Personal History. — Midwife in attendance at confinement; normal position; no difficulties. Mother did not have a fæcal movement until sixth day after labor, at which time she got up to attend to her household duties. Baby was of average size; no abnormalities; nursed at breast, often and with relish; bowels (baby's) moved two or three times daily during the time that mother kept to bed. Cord fell off on third, fourth or fifth day, mother apparently in doubt as to exact time, her statements varying on different occasions.

Present Illness. — The first signs mother noticed were that baby was becoming constipated, and that she cried more than usual on seventh and eighth days. On eighth day gave castoria ʒ ii-iii in divided doses, with little or no result.

Ninth Day. — My first visit. Patient crying as though in pain. Temperature by axilla 100⅕° F.; pulse 160. Respiration rapid and short, with some dilatation of nares on inspiration. Examination of chest was negative. Abdomen much distended, abdominal wall rising abruptly at thoracic junction and taking no part in the respiratory movements. The distension was uniform and regular. Skin was reddened more than normal, redness being most marked immediately surrounding umbilicus.

Vulva was involved in this inflammatory process, the left half being prominent and protruding beyond right. No vaginal discharge. Urinated during inspection of genitals, thus eliminating rupture of bladder from retention as a causative factor in producing a possible peritonitis. Abdominal wall, on palpation, resistant and "as hard as a board." Tympanites as denoted by percussion note. Wishing to positively exclude intussusception, ordered flushing with soapsuds; much gas and some fæcal matter expelled. *Treatment.* — Hot packs; calomel, gr. 1-6, every hour until gr. ii had been taken; for pain and tympanites, a mixture of tr. opium and tr. asafœtida, p. r. n.

Tenth Day. — Patient passed fæces twice during night. Pulse increasing. A mixture of digitalis, belladonna and whiskey was prescribed and continued until the end. Pupils moderately contracted; laudanum mixture used more cautiously. Rests most comfortably when lying in semi-recumbent posture with thighs flexed. Pain unmistakably exaggerated by a change calling for extension, as, for example, in giving bath. In the afternoon there was a universal preternatural redness of abdominal wall, accompanied by even more distension than on preceding day. Umbilicus normal, except for redness. Veins in epigastrium visible. Color of vulva was a brighter red than that of abdominal wall, which latter was inclined toward dark blue or purple. Insisted very urgently on cleanliness about genitals. Substituted hot bichloride of mercury packs, 1:10,000, for plain hot packs. Evening temperature 101⅖°; pulse 160.

Eleventh Day. — Vomiting, which mother attributed to heart stimulant, probable cause being the peritonitis. Vomited matter was fluid and bright yellow, permanently staining bib. Perceptible dilatation of stomach, its outline being distinctly marked on parietes of abdomen. Temperature varied from 100⅕° in the morning to 101° in the evening; pulse from 160 to 180.

Twelfth and Thirteenth Days. — General condition practically unchanged. Temperature did not fall below 100°, nor rise above 101⅗°; pulse ranged from 160 to 180. Slight increase in size of abdomen. Superficial veins in epigastrum somewhat more prominent.

Fourteenth Day. — On examining umbilicus, observed a drop which looked like serum on microscopical examination. Thought of the possibility of its being caused by the peritonitis, but no perforation was discernible. Repeated the calomel.

Fifteenth Day. — Morning temperature 1° above normal; pulse 158. Fæcal movement since last visit. Patient very restless during night; face more drawn. At 6:00 P. M. pulse 154. At umbilicus shreds of coagulated lymph were to be seen; shreds numbered three or four, the longest measuring about ⅖ inch. On removing lymph an opening was exposed, which communicated with peritoneal cavity. This opening was located at the lowermost part of the remains of the cord, in the umbilical depression, and was large enough to admit of the entrance of the common black-headed cylindrical match. With the aid of a strong light the peritoneal covering of the viscera could be seen. Vomiting has persisted, occurring at least three times daily, ejecta having the same bright yellow color.

Sixteenth Day. — Was called about 6:00 A. M. by father, who said baby was having a convulsion. Responded immediately, but upon my arrival, about ten minutes after call, baby was dead. Body still warm; abdomen soft and boggy. Umbilicus showed no opening on hurried examination. During night had four large diarrhœal movements. Convulsion was probably general, but not very strong; twitching of muscles of face and upper extremities observed by parents.

It is to be regretted that the parents were opposed to an autopsy. The findings might have been of very considerable value. Nevertheless, in the absence of autopsy and bacteriological examination, the clinical course was such as to warrant the conclusions to be drawn. And we feel confident that a post mortem would confirm these conclusions. Subsequently was informed by father that fluids regurgitated through nose and mouth shortly after the final respiration.

In reviewing the history of our case we recall that the initial symptoms were noted on seventh and eighth days. Osler[1] gives the period of incubation as from three to seven days. The primary infection occurred at umbilicus, extending over abdomen to thighs, the latter being affected only within an inch or two of their proximal extremities anteriorly. The umbilicus is most frequently inoculated. Atkinson,[2] however, reports a case occurring in an infant of ten days, which began on right knee, extending to and over abdomen. Death followed a slight convulsion on twenty-first day.

Our case seems to be the first reported in which perforation of the abdominal wall occurred in an infant. Gray,[3] speaking on umbilicus, says: "Sometimes ovarian fluids, pus in peritonitis, and entozoa escape here." The escape of the lymph may be accounted for by the cellulitis which accompanied the erysipelas causing thickening of the abdominal parieties, with consequent encroachment upon the peritoneal cavity. This encroachment existing concomitantly with the intestinal distension of the peritonitis, the exudate of the latter found vent at the weakest point, which here proved to be in the umbilical fossa. This explanation is tenable, having for its basis the fact that the pressure of gases is equal in all directions.

While erysipelas neonatorum differs in no essentials from the erysipelas of adults, except perhaps as regards its anatomical complications, it surely deserves more consideration than is generally given it in text-books on pediatrics. True, with proper prophylaxis it may be prevented. But there are times when even with the adoption and enforcement of all precautions infections arise which baffle us; and to cover our ignorance we are compelled to attribute the resultant diseases to idiopathic causes.

The erysipelas streptococcus, isolated and identified by Felheisen,[4] in order to gain entrance into the system, must lodge on broken skin or mucous membrane. In the infant this solution of continuity is nowhere more frequently met with than at the umbilicus; and we correctly look to this site as being predisposed. On the segregation of the cord there presents a small surface in its primary stage of granulation. This surface serves as a good medium for the growth of bacteria; while its freely open lymphatics and at times its umbilical vessels assist in promoting their absorption.

Inflammatory conditions arising here may be cut short by the early application of proper remedies. With an advance of a streptococcus inflammation we may be confronted with: 1. a general superficial diffusion, or dermatitis; 2. a general deep extension or cellulitis; 3. a local cellulitis; 4. an acute peritonitis; 5. a septicæmia. At times the general cellulitis supperates, and we have, clinically, a phlegmonous cellulitis; so also does the local cellulitis become converted into a phlegmon. Why a cellulitis due to the streptococcus, a pyogenic germ, as evidenced by Blumer, does not always suppurate, is a question which has yet to be answered.

Among the remote complications or those which develop relatively late are endocarditis, pneumonia, pleurisy and others too numerous and too far removed to be entertained seriously in rendering a prognosis in a disease which is practically hopeless from its inception. Of course, any one of these complications may accompany a dermal erysipelatous attack; or they may all consecutively develop and exist simultaneously.

It is well to remember that in the fœtal circulation the umbilical vein ramifies, sending two branches to the liver and one to the ascending vena cava. With the entrance of the streptococcus involvement of the liver is a plausible possibility. The latter organ being contiguous with the peritoneum, a further inflammatory extension may mean a peritonitis. Smith[5] reports a case which died on tenth day after birth, the autopsy revealing an umbilical phlegmon, peritonitis, gastritis and pneumonia. The streptococcus pyogenes, now generally considered as being identical with the streptococcus erysipelatis, was found, together with the staphylococcus pyogenes aureus, in the umbilical vein. If a hepatitis did exist in our case it was not diagnosed.

It is a conceded fact that extension is generally affected through the lymphatics. Our evidence is the discovery of this bacterium in these vessels. The inflammation may extend to adjacent organs, or it may appear in distant parts. Park,[6] in relation to the latter, says: "In a small proportion of cases the infectious organism appears to be transported from one part of the body to another, and thus we have metastatic expressions of this disease. The most common expressions of this are to be seen in erysipelatous meningitis after erysipelas of the face or scalp, and erysipelatous peritonitis after the disease has manifested itself on the truncal surface." These cited examples are of direct extension rather than of transportation. To differentiate we may say that the former is dependent on the lymphatics, while the latter is due to the distribution of the causative agency in the circulating blood. That the streptococcus has been found in the blood during and after life admits of no question. "Metastatic expressions" might be better exemplified by cases, for instance, in which endocardites, due to streptococci, were secondary to or followed cutaneous erysipelatous inflammations.

In determining the etiology of a peritonitis we should bear in mind the communication by the genital tract in the female. Another route worthy of consideration is through the lymphatics connecting intestines and peritoneum. Cassel[7] reports three cases illustrative of the latter, in which peritonites were secondary to enterites. Before proclaiming the cause of a peritonitis we might recall Smith's[8] case in which peritonitis followed inoculation at the umbilicus, the latter being apparently normal on inspection. Our patient had no vaginitis; no enteritis; and there was no history of trauma. There was a specific inflammation at and around the umbilicus. The weight of evidence conclusively proves that the peritonitis was secondary to and dependent upon the erysipelas.

From the beginning of the patient's illness the symptoms of the peritonitis were most prominent. There did not seem to be any pus formation either on the abdominal wall or within the peritoneal cavity. Had the peritonitis been purulent, it is fair to assume that pus would have presented at the opening in the umbilical fossa. The erysipelas streptococcus was, up to a short time ago, looked upon as a non-pyogenic bacterium. Senn[9] wrote: "As we are not in possession of conclusive proof that the streptococcus of erysipelas possesses pyogenic properties, we can only explain the occurrence of phlegmonous inflammation of the tissues underneath the skin affected by erysipelatous inflammation by taking it for granted that the deep-seated phlegmonous inflammation is caused not only by the streptococcus of erysipelas, but also by the accidental entrance into the tissues of microbes of suppuration." But since the identity of the two streptococci, erysipelatis and pyogenes, has been proved, phlegmonous inflammation is easily explained The problem awaiting demonstration is why erysipelas is not invariably attended by pus formation.

Sternberg,[10] quoting the investigations of Von Longelsheim, experiments made in 1891, attributes the virulence of the streptococcus to be dependent on the number of cocci entering into the formation of the chains; and makes mention of the streptococci longus and brevis, the former being the streptococcus erysipelatis and the latter the streptococcus pyogenes.

The investigations of Petruschky,[11] more recent and now generally accepted, prove that the morbid conditions depend, not on the length of the chains, but on the "seat of infection, the individual resistance, and the influence of existing diseases." We are all aware that dermal infection, facial for instance, of a healthy person in the prime of life may produce a disease which frequently terminates in spontaneous recovery. On the other hand, a streptococcus implantation, accidental or otherwise, on a uterus during involution produces a disease, puerperal septicæmia, at a time in a woman's life when nature's resisting powers are below par; and the outcome is a question of grave concern even to the physician who directs treatment under the most auspicious surroundings. The clinical relationship between erysipelas and septicæmia was known to exist long before its bacteriological demonstration. That streptococcus inoculation is influenced by existing diseases, and *vice versa,* we learn from papers by Tilmans[12] and Coley,[13] both of whom report improvements and even complete cures in carcinomata and sarcomata, during and following the concurrence of an erysipelatous attack.

The prognosis in infantile erysipelas is very unfavorable. Recoveries are the exception. Adams[14] reports a recovery in an infant of six weeks, the case being also remarkable because the blush of erysipelas, involvement of face and scalp, did not appear until five or six days after the first of the constitutional symptoms. Another case to get well is Steele's;[15] in this case antistreptococcus serum was the only remedy employed. Convulsions are somewhat common and death almost invariably follows the seizure. The liability of the mother to contagion is necessarily great; nevertheless, escapes are the rule. Since the advent of serumtherapy the prognosis may be said to be somewhat more encouraging.

The history of this and similar cases forces us to two conclusions: 1. The importance of personal attention to the dressing and inspection of the cord. In the absence of a trained nurse these duties fall to the physician and should be conscientiously performed.

2. That the laxity of the law in regard to this most important branch of medicine has thrown upon communities a class popularly known as midwives, whose lack of knowledge of the physiology of parturition is as great as is their ignorance of the fundamental principles of Listerism. It is not necessary to recite the superstitions held by many of them to be convinced of the shallowness of their preliminary training. The innumerable lives already sacrificed by legislators who countenance and encourage a continuance of their recognition seems inconsistent with sound judgment. The remedy lies in the abolishment of this class, or at least in having them qualify before an examining board before permitting them to practice. Protection to mother and child will then be insured in the greatest degree; there will be a palpable decrease in deaths from infection; and blindness coincident with birth will be reduced to its minimum.

120 LARK STREET.

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Clinical and Pathological Notes.

Uterine Hemorrhage — Impromptu Tampon.[*]

About five o'clock one morning I was hurriedly called to a house where I had not previously visited and knew nothing of the family or surrounding circumstances. Having reached the house I found a scantily furnished room crowded with women, my patient lying upon a bed that was literally saturated with blood, and apparently dying of unrestrained hemorrhage. Her face was pallid, lips blue, eyes glassy and staring with scant indication of consciousness. Hastily making a few inquiries, I only discovered a preconcerted determination to give me as little information as possible. The general appearance of poorly concealed guilt, however, justified the conclusion that she was the victim of a criminal abortion, performed by some scamp who had become frightened and decamped, absolutely abandoning her to her fate, which, indeed, seemed inevitable. Without further parley or delay I made the examination and found that blood was still oozing in pace with her failing strength and life. I immediately perceived that I could control the flow by internal digital pressure, and thus watched the issue, holding her very life in one hand, while with the other I administered small doses of ergot, which I was fortunate enough to have with me. In time I observed improvement in her condition, and would have hoped to save her life if I could but leave her or remove my hand and its vitally important pressure. Of course I regarded it as a case for the tampon, but where or how was I to get such an article at that hour in the morning in a remote section of the city, with none but heathens with or about me. As I was thus pondering, in an uncomfortable position between the bed and the floor, my wandering eye caught sight of a basket of soiled clothes under the bed, and upon the top of the heap was one of the woman's stockings. In a minute I demanded that dirty but precious stocking and some lard. In another minute I quickly withdrew my hand

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DEAR ANNALS :

[*] I have been so much interested in the perusal of recent articles in your columns upon various forms of Post-partum Hemorrhage, and their treatment, that I feel prompted to report a case of my own, occurring in the very early days of my practice. It was my second or third case of obstetrics — just after hanging out my shingle in Philadelphia, but has never before been reported.

N. ROE BRADNER, '64.

from the vagina and inserted it into the stocking, having greased the toe, and then reinserted within the vagina my hand within the stocking until I reached the point where pressure was required, and rejoiced to find that I could transmit a sufficient amount of pressure through the stocking to completely restrain the hemmorrhage. All that now remained to be done was to pack the stocking until the vagina was completely full and wedged, and from that time the woman made a rapid and complete recovery. That was more than a quarter of a century ago, but from that day I've never felt more certain of human life being saved through my efforts than on that very occasion.

The interest in this case may be reduced to a single item, namely, the importance, even in our learned profession, of drawing upon our ingenuity and common sense as well as our education, and especially the advantages of recognizing and appropriating to our needful use the chance resources about us, even if they are but meagre.

N. ROE BRADNER.

Editorials.

The Albany Hospital.

No structure emphasizes so strongly the manifold development of the various elements of civilization so characteristic of the end of the nineteenth century as does a modern hospital. It typifies medical progress, philanthropy, sanitary and mechanical skill, architectural beauty.

The time is happily past when any old discarded building, useless for its original purpose, is considered good enough for a hospital. The best results are obtained only when all the conditions and surroundings are the most conducive to the restoration of the patients' well being. Pure air, plenty of sunlight, thorough ventilation, well ordered wards, sanitary plumbing, properly arranged kitchen and laundry are even more essential for the sick than the well. The exigencies and progress of modern surgery and medicine demand that every physical help possible should be given to the surgeon and physician in his work. The hospital is no longer regarded simply as a last and final resort, where the poor forsaken and wretched may end a miserable existence, but a noble blessing, open to the suffering, rich and poor alike, who seek its portals, not to die but to live. The history of the Albany Hospital is an index of this evolution in hospital construction.

Dr. Alden March, after much labor, succeeded in having the Albany Hospital incorporated by act of the legislature, April 11, 1849. Fifty thousand dollars were raised by subscription and, after the use of a temporary structure for one year, the County Jail building was purchased for the permanent hospital, and this building, with the additions made from time to time, has since been used.

It has, for some time, been felt, however, that a new hospital erected in consonance with modern ideas of hospital construction was a simple and urgent necessity.

The new Albany Hospital, designed upon the most approved principles and to be equipped with all the latest and best appliances, fittingly represents this new epoch of progress.

The noble words of J. C. Spencer, President of the Board of Governors, spoken on November 1, 1851, at the opening of the hospital, are even more applicable in these days of advanced medical science, " Christian charity has touched the hearts of our citizens and with a liberality that honors them they have opened their purses and by individual contributions have commenced this hospital which we have now met to inaugurate.

" The wounded or sick stranger or citizen, destitute of everything but his claim on our common humanity, shall here be received without money and without price, shall find a home, the most skilful surgical and medical care which science and sympathy can bestow, tender and watchful nurses, the most pure medicines, comfortable beds, warm and airy rooms and a vigilant superintendence which will guard their slumbers, cheer their convalescence and restore them to their families in health and peace.

" THIS, generous contributors to this blessed charity, is your work! When in the silent watches of the night you are yourselves the victims of disease or injury, your pangs and sufferings will be mitigated by the reflection that you have furnished the means of relieving for generations to come the pangs and sufferings of countless thousands. And for ages after you shall have been gathered to your fathers, this stream of your benevolence will continue to flow on, dispensing health to the sick, relief to the agonies of the wounded, comfort and peace to the dying and to the poor the greatest of all earthly consolations, that in the hour of their extremity they will not be abandoned to despair. In that last struggle of the soul to quit its tenement, when the glitter of wealth, the toys of ambition, the bubbles of pleasures shall excite only disgust, the memory of your agency in the promotion of these purposes will bring peace and consolation to your departing spirits and smooth their passage to that region where, you are assured by the Inspired Volume, an omnipotent voice will be heard declaring, 'Well done, good and faithful servants; inasmuch as ye have done this to the least of these, My brethren, you have done it unto Me!'"

Obituary.

William H. Bailey, M. D., LL. D.

No one has ever been more closely identified in many ways with the medical profession of Albany and of the State of New York than has our departed friend, Dr. William H. Bailey. He touched the life of the profession at such varied points, his life extended over so lengthy a period, his tastes and social qualities brought him to acquaintance and intimacy with representative members of the profession all about the State, while in his own community he was familiar with every one, and his energetic disposition made him so certain to be a participant in every professional enterprise that, as perhaps with few it can be said, that a diary in detail of his life would reflect much of the personal and professional biography of the medical life of his day here at home and more extendedly about the State.

The outline of the more important matters which concern his biography are, as of every life, of interest to make a record of.

He was the son of a physician, Dr. Solomon Bailey, who was born in Chatham, this State, in 1774, was a fellow student in medicine with Dr. T. Romeyn Beck in the office of Drs. Low and McClelland here in Albany in the early part of this century, and from 1812 to 1839, when he died, practiced his profession in the town of Bethlehem. Two of his sons followed his example in the

Wm. O. Bailey

choice of a life work — Dr. James S. Bailey, who died here in Albany in 1883, whose son, Dr. Theodore P. Bailey, we have now with us, and his brother, a few years older, who is the occasion of this memorial.

Dr. William H. Bailey was born December 28, 1825, and, dying on the 24th of June, 1898, was past the age of 73. He was born in this county in the town of Bethlehem, where the early years of his life were spent, his father's death occurring when he was 14 years old. The education which he secured at some cost and sacrifice beyond that of the common school was obtained at the Cazenovia Academy and at the Normal School of Albany. He became a school teacher himself, to further his resources, in Alabama, where his life furnished material for much anecdote and reminiscence later.

His medical study he got here in Albany and his diploma was given him in 1853. He was given, years later, an honorary degree of M. D. from Soule University, Texas, and also of LL. D. from Washington and Jefferson College, Pennsylvania.

He immediately began his work of practice of medicine here, and not far from where we have known the location of his present office these many years has been the scene of his labor. Of his strictly professional work I need only say that it soon became important, and he has been for many years, until made feeble by a chronic ailment of considerable duration which has lessened his capacity for work, one of the busiest practitioners in the city.

He joined the County Medical Society in 1854, has been a leading figure in it, has held its offices and done its work; has been a delegate from it to the State Society wherein he has been a member since 1864, its secretary for ten years and, in 1880, its president.

During the war he was commissioned a Surgeon of Volunteers and was assigned to duty at Washington and in the field hospitals of the Army of the Potomac. (He was for years a member of the board of managers of the Hudson River State Hospital; a United States pension examining surgeon; a member of the medical staff of the Albany Hospital.)

These are the salient facts such as usually find record of one; and I do not care to add any word of fulsome eulogy, but to picture him as I have known him intimately, associated with him for some years in office work, and, always regarding him as one of my best personal friends, I must say a word of his qualities of character. He gave me my first hearty greeting to Albany, and the impression he first made has never been modified — that he was one of the most genial and agreeable companions I ever met. He was full of good-heartedness; he was a man of enthusiasm; he was easily enlisted in one's cause; he had a gift of winning people. He had strong qualities and was vigorous in his opinions, but there was not a tinge of anything other than good nature in his make-up. He won many friends — in fact I think everyone who had to do with him became his friend. He had a powerful physique and was capable of great endurance. His work was that of the general family physician and he was ideally fitted for it. He gave all his time to his patrons and let no outside non-professional duties come in to interfere with their service. He was the friendly adviser to all of them. The enfeebling effect of recent years of indisposition has taken his hand from much of the work of his prime, but there are a host of hearts that will be filled with sorrow at the word of his death, and none more so than those, his associates, who have known and prized him for the sterling qualities found in him, and all that we found in him of counsellor and friend, and to me personally it will be a joy always to have had him for an intimate friend.

FREDERIC C. CURTIS.

MARY E. SPAULDING.

The beloved wife of Dr. Warren Clyde Spaulding, of 273 Lenox avenue, New York City, died at Cornwall-on-the-Hudson, Sunday, June 19, 1898, and was interred in the Albany Rural cemetery.

FRANK G. SEAMAN, M. D.

Dr. Seaman died, after an illness of two days, of apoplexy, July 12, 1898, at his home in Seneca Falls, N. Y. He was born in Fairfield, Herkimer county, in 1860, and graduated from the Albany Medical College in 1881. He immediately began to practice in Seneca Falls and quickly became prominent in his profession. His affability and kindness of heart endeared him to innumerable friends. He was unmarried, and is survived by two sisters.

Medical News.

Albany County Medical Society. — A special meeting was called to order June 25, 1898, by Vice-President Ullman to take action upon the death of the late William H. Bailey. On motion of Dr. Bigelow, Drs. Freeman, Curtis, Vander Veer, O'Leary and Bendell were appointed a committee to present memorial resolutions.

Letters of condolence from Drs. Vander Veer and Curtis were read, and Drs. Bendell and C. H. Moore spoke.

On motion of Dr. Bendell, the committee was authorized to have the late Dr. Bailey's picture inserted in the Medical Annals.

The Society agreed, upon motion of Dr. O'Leary, to attend the funeral.

The Society then, on motion, adjourned.

Lane Medical Lectures. — The third course of the Lane Medical Lectures inaugurated in Cooper Medical College, San Francisco, Cal., in 1896, will be given in 1898 by Thos. Clifford Allbutt Regius, Professor of Physics, University of Cambridge, England. These lectures on "Diseases of the Heart" will be delivered, two a day, as follows: July 18, "Cardiac Physics;" "Functional Diseases of the Heart;" July 19, "Strain of the Heart;" "Chronic Cardio-Arterial Disease;" July 20, "Senile Plethora;" "Angina Pectoris;" July 21, "Aortic Valvular Disease;" "Valvular Mitral Disease of the Heart;" July 22, "Pericarditis;" "Advance of Medicine During the Nineteenth Century." Mr. Christopher Heath, ex-president of the Royal College of Surgeons, England, delivered this course of lectures last year, and Dr. Macewen, the eminent surgeon of Glasgow, Scotland, was the lecturer in the first course, two years ago.

— The Public Library of the city of Boston wishes to obtain a copy of the Annals of February, 1897. It is requested that anyone having a copy to spare will address Herbert Putnam, Librarian, Boston, Mass.

— The death of Dr. Wm. H. Bailey removed the last remaining professional associate of the late Dr. Sylvester D. Willard of this city, a physician of great prominence during the early part of the Civil War, who made for himself a most excellent and enviable reputation. Those who still remember him will be glad to learn that his son, Sylvester Willard, Esq., M. R. C. S., 143 Victoria st., S. W., London, England, has been appointed associate pathologist to the Cancer Hospital, Brompton, London, S. W. Dr. Willard is now permanently located in London and attaining enviable success. It will be a source of great gratification to many Americans to know that they have there an American physician in whom they can place confidence, should they require his services.

— Dr. Willis G. Macdonald, who had recently been appointed volunteer military surgeon, with the rank of Major, was detailed by the Secretary of War to Fort McPherson, Georgia, and left on July 12th for his field of work. He found plenty to do on his arrival, as they had, a few days before, received some 300 wounded men from about Santiago. Although quite a number of the wounds were found to be septic, many of them were doing nicely. They had all been dressed on the field, or in the field hospitals, and some of them were serious cases. Dr. Macdonald will find plenty to do for some time, and will be able to make good use of his knowledge of aseptic and conservative surgery.

This is the hospital to which Dr. Edgar Vander Veer, acting assistant surgeon, U. S. A., was detailed on May 3d. He has had under his direct care many suffering from typhoid fever, bowel troubles and like conditions. He is also much interested in the wounded from Cuba, being largely in the line of his previous experience. Both of these physicians will represent Albany well, and may be relied upon to do their work in a highly creditable manner.

Practical Therapeutics.

Treatment of Warts. — Dulonpré paints the warts once daily with a warm saturated solution of chromate of potash. The treatment is painless and efficient after a short time.

Chloroform as an Anthelmintic. — Carratù (*Giorn Med., 1897, Nos. 8 and 9*) has employed chloroform as an anthelmintic in many cases — with prompt action and no bad results. He prescribes six drops of chloroform in syrup every two hours, beginning early in the morning, until one drachm is taken, and follows it in an hour with an ounce of castor oil. The diet should be plain.

Treatment of Tuberculosis.—V. Ziemssen (*Munch. Med. Woch.; January 4, 1898*) discusses the specific and climatic treatment of tuberculosis. His results from the tuberculin have been unsatisfactory and he has no expectations either from it or from Maraghano's serum. In local tuberculosis of the skin, bones and joints the tuberculin treatment may be more efficacious, and he has seen one case of lupus cured by tuberculin. The condition of the lungs, however, is too complicated to allow of a direct action of the tuberculin upon the pathogenic organism, besides the streptococcus and staphylococcus infections complicate the condition.

The value of open-air treatment is universally admitted, and the advantages of high altitudes are: (1) The air is purer; (2) The greater amount of ozone present; (3) The diminished pressure; (4) The rays of the sun being warmer the air is drier and fog rarer; (5) Increase of the red cells induced.

The disadvantages of high altitudes consist in the variation in wind, rain and snow.

Some sanitoria show that phthisis can be treated as well in ordinary as in high altitudes, and in them rests the future for a more successful treatment of tuberculosis.

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For the Annals.

Original Communications.

LESIONS OF THE CENTRUM OVALE, WITH A REPORT OF A CASE OF TUMOR IN THE RIGHT CENTRUM SEMI-OVALE, WITH AUTOPSY.

REMARKS ON CLINICAL SYMPTOMS AND DIFFERENTIAL DIAGNOSIS.

By HERMON C. GORDINIER, A. M., M. D.,
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Patient's History. — On September 1st, 1894, the patient, Casper G., German, consulted me. He was forty-nine years of age, married, brewer by occupation. In early childhood had measles, scarlet fever, pneumonia and entero-colitis. Never received any injury to his head or spine. Denied having suffered from syphilis or any other venereal affection. No history of insanity or other nervous diseases in family. Had never had any discharge from the ears. Present affection began about three months ago, with a slight occasional flexion of the left little finger toward the palm of the hand. This flexion repeated itself several times during the day. Two days later the ring finger assumed repeatedly the same flexed position. A day or two later the middle, index finger and thumb did the same. He was soon unable to move the fingers of his left hand or to hold any object in it. He continued to work for three weeks, but with much difficulty, owing to the cramped position of that hand. Soon after the flexion of the fingers made its appearance the patient noticed a spasm, invariably beginning in the fingers of the left hand. The thumb was bent into the palm and was covered by the flexed fingers. The spasm would then rapidly extend up the left arm, flexing the forearm on the arm, and then the shoulder would be convulsed. Almost simultaneously the left side of the face and eyelids would move, and the left leg as high as the knee. The patient stated that the spasm passed from the knee down to the toes, moving them and causing the foot to be flexed upon the leg. These attacks were always preceded by feelings of numbness and formication in the fingers and toes. The tongue was never convulsed. After the spasms disappeared the arm felt very weak, but he had noticed up to that time no special weakness of the leg. He complained, in addition, of severe headache and dizziness, the former being general, rarely limited to the top of the head.

Status Præsens. — Patient six feet in height, weight 160 pounds, fair complexion and light hair, walked with a very slight hemiplegic gait, fairly intelligent, cerebration active, memory good, pupils moderately and equally dilated, responded to light and accommodation. Wernicke's hemiopic pupillary phenomenon was present. No contraction of the visual fields was observed. Color vision normal. Associated and general movements of the eyeballs perfect. Lids moved normally. No nystagmus. Optic discs slightly indistinct, but no actual neuritis present; the veins are dilated and arteries rather small. Hearing normal, drum membranes appeared normal. No evidence of facial paralysis. Tongue protruded straight, without fibrillation, tremor or atrophy. All forms of sensation perfect on face and head. Movements of the soft palate symmetrical, uvula straight. No anæsthesia of mucous surfaces of mouth. No difficulty in swallowing. Senses of smell and taste normal. Production of vocal sounds perfect. Vocal cords properly adducted and abducted. Patient could not place left hand upon his head. Could with difficulty put it back of him. Could not separate the fingers of the left hand, nor flex nor extend fingers or thumb of that hand. The whole left arm was rather stiffly held in a semi-flexed position. The fingers and thumb were swollen and of a bluish color. Tactile sense was decidedly diminished on the skin of the fingers, thumb and palm of the affected hand. Thermal and painful senses normal. It was rather difficult to be positive about the condition of muscular sense, as the fingers, hand and arm were so stiffly held. The sense of posture was normal, as the patient was able to locate accurately his arm or leg in any position in which it might be held. The entire left upper extremity was paretic, movements of abduction, adduction, extension, flexion all being slowly performed. The patient was unable to perform symmetrical bilateral movements. The leg was weak, but less so than the arm. Tactile temperature, painful and muscular sense were normal. There was no muscular wasting of the left side, and the electrical response was normal. The reflexes, plantar, cremasteric, present and react in a normal manner. Left patella tendon reflex exaggerated. No foot clonus. No wrist tendon reflex to be obtained. Triceps tendon reflex present. Motion and sensation, as well as the deep and superficial reflexes of the right side were normal. Patient has full control over the sphincters. Heart, lungs, liver and splenic dullness normal. Arteries at wrists soft, compressible, beats regular and 76 to the minute. Urine normal in quantity, negative to chemical and microscopical examination. No scars upon body anywhere detectable. No enlarged glands. No tenderness of scalp upon percussion. Owing to the fact that no surface thermometer was at hand, no record of any disparity of temperature upon the different portions of the scalp was noted. Blood examination: hæmoglobin, 90%; relation of white to red corpuscles, 1 to 300; red discs normal; white corpuscles mostly of polynuclear form.

Bearing in mind the common occurrence of gummata even without an acknowledged history of that disease, the patient was placed upon increasing doses of potassium iodide, with occasional mercurial innunctions extending over a period of a month, without result, as the subsequent history proves.

October 1st. — Patient was very much worse, headache and dizziness continuing unabated. No vomiting. For several days has had from one to three clonic unilateral convulsions, which began with numbness, followed by spasm in left hand, arm and shoulder, and followed at a very brief interval by movements of a like nature of the face and leg. After these attacks the arm was left almost powerless, the leg in a state of paresis, and the left side of the face showed a slight paretic condition. There was considerable anæsthesia of hand and forearm, but none of the face or leg. Patellar reflex on left side lively. Slight ankle clonus. Hemiplegic gait was marked.

The patient had now reached a daily dose of 300 minims of a saturated solution of iodide of potassium, but not only was there no abatement of the symptoms, but the patient was utterly unable to tolerate any further use of the drug, so that it was discontinued.

October 25th. — Patient's condition same as above, save that the arm is totally paralyzed, the leg and face paretic. Unilateral convulsions continue about thrice daily.

October 29th. — No difficulty in swallowing; optic discs congested; edges of discs discernible; no actual neuritis; no cranial nerve involvement apart from the slight paralysis of the facial; no contraction of visual fields. Vision unimpaired. Some mental hebetude. Speech processes a little slower than at first. Headache and vertigo continue unabated.

Diagnosis. — In consideration of the above-mentioned symptoms, viz., numbness immediately followed by repeated unilateral clonic convulsions, involving the whole left side, beginning in the distal part of the left upper extremity, then extending to the arm and shoulder, soon after affecting the face and distal part of the lower extremity, then to be followed by paresis of the whole left side, more marked in the upper extremity, then followed by complete paralysis of motion and slight paralysis of sensation of arm and hand, with paresis of face and leg, I was led to the diagnosis of a cortical lesion. Owing to the fact that the spasm always began in the hand and later appeared in the face and leg, the lesion was thought to be of an irritating character localized in the cortical motor area governing movements for the arm. It was deemed from the later involvement of the face and leg in these spasms that the centers of these localities were excited to discharges of energy by the gradual extension of the irritating focus. A lesion of the cerebellum was excluded because of the absence of involvement of any of the cranial nerves other than the facial, and from the absence of the ordinary symptoms of a lesion of its peduncles or its middle lobe.

The diagnosis of the character of the lesion was that of a cortical tumor, although some of the classical symptoms of tumor did not exist, as, for instance, well-marked choked discs, vomiting, localized headaches, percussion tenderness, or cranial nerve involvement. The rather gradual onset, the frequent repetition of the Jacksonian attacks, with the appearance of paresis followed by complete paralysis of the arm and partial paralysis of the leg, all occurring within a period of four months, evidently showed a rapidly advancing process; if a tumor, one of rapid growth, either a gumma, glioma or endothelioma.

The patient was advised to submit to an exploratory operation and acquiesced.

Operation. — The operation was performed November first, 1894, by W. W. Seymour, M. D., of Troy. The right Rolandic area was exposed by the method of Reid under strict antiseptic precautions, the trephine being used and the opening enlarged by rongeur forceps. The dura seemed tense, and upon being incised was found free from adhesions. No apparent pulsation of the brain at site of operation. Vessels of pia were engorged. The cortex appeared rather firm, with no local bulging nor visible nor palpable tumor, nor thickening. After several exploratory probings without result, it was concluded that the lesion was sub-cortical, and it was deemed wise to close the opening after all hemorrhage was controlled. The dura was stitched with catgut and the scalp wound united without replacing the bony fragments.

November 2d. — The patient recovered thoroughly from the effects of the ether; has less headache and no vomiting. Can move the left leg as well as before the operation, while the arm remains totally paralyzed. The face is still in a condition of paresis. The patient seems dull, forgets easily, and takes but little nourishment. The Jacksonian attacks did not recur after the operation.

Temperature normal; pulse 80.

November 10th. — Complains of intense headache and dizziness; leg almost completely paralyzed; temperature 100.5°, respiration 18, pulse 60, slow and feeble.

November 11th. — Patient comatose, pupils widely dilated, react sluggishly to light, temperature 102°, pulse 100.

November 13th. — Patient died at one A. M.

Autopsy, November 14th, 10 A. M. — Examination of head only permitted. External wound firmly united. Dura mater adherent over area trephined, which area was in a condition of incipient softening. A fullness existed about the middle of the central convolutions. Pia stripped easily, save over the point of trephining. No thickening of cortex or growth upon its surface, and its color was normal. On making sections through the right hemisphere a growth was discovered in the right centrum ovale, about 4 cm. long by 3 cm. broad, beneath the central convolutions, the longer end being located exactly under the middle part of the central gyri, the smaller end passing obliquely downward to the lenticular nucleus involving it, but not invading the internal capsule. The anterior limb of the latter seemed slightly displaced. There was an area in the capsule just posterior to its knee which had a different appearance from the rest. Secondary descending degeneration? It was about 1 cm. in diameter and of a roundish contour. The growth was obliquely situated in the white matter, and involved a portion of the parietal lobe. The opposite hemisphere was normal, as were the pons, medulla, cerebellum and cranial nerves. There was an increase of ventricular and subarachnoidean fluid. The tumor was moderately soft, not encapsulated, and its periphery blended inseparably with the adjoining white matter.

The family refused permission for any specimens of the brain, save the tumor, to be removed.

Microscopical Examination. — The tumor was hardened in Müller's fluid and embedded in celloidin. The sections were stained with carmine, eosin and hæmotoxylin and Bismarck brown. They were examined after being mounted in Canada balsam.

Reichert $\frac{1}{8}$ objective. The growth was in places very vascular. It consisted of a fine fibrillated tissue stroma, in the meshes of which existed innumerable spherical cells varying a little in size, most of them being about the size of small lymphocytes. The adjoining white matter showed evidence of the extension of this small round-celled infiltration. At no part of the growth could the typical glia cells, with their long slender processes radiating from all parts of the cells' surface, be seen, although in some situations bundles of very fine fibres were observed, having among them small spherical cells, appearing as if they might have been processes of those cells. In other situations the spherical cells were found grouped, some of them taking the stain well, while others stained indistinctly. There was a coarse fibrillated tissue about the blood vessels. Some parts of the tumor stained only indistinctly, as if those parts were degenerated.

REMARKS.

It is worthy of note that in this case we have a tumor of the centrum ovale of the right side, which, although distinctly subcortical in its situation, produced a symptom-complex of an identical character with that of a cortical growth, which led to the diagnosis of such a growth. It is also interesting to learn that the repeated unilateral attacks which occurred on the left side were of the typical Jacksonian type, beginning with an aura of numbness and tingling in the fingers (Seguin's signal symptom), soon to be followed by a clonic spasm of the fingers, then of the hand, forearm, arm and shoulder, shortly after, with spasms of a like nature in the leg, beginning about the knee, then involving the leg and foot and simultaneously the muscles of the left side of the face, without at any time loss of consciousness or general epileptiform attacks. The order of the attacks would cause one to believe that the primary point of discharge was in the lower and back part of the arm area, and that there followed like a ripple on the surface an orderly discharge of energy from that point forward and upward, involving the centers of action for the muscles governing the movements of the fingers, hand and arm, then for the leg, foot, toes and face. This case proves that a tumor located entirely in the centrum ovale, beneath the motor area, may excite typical Jacksonian attacks. I insert the following case, seen in consultation, to illustrate the fact that, contrary to the belief of Gowers, Nothnagel and others, at times any lesion of an irritative character, located in the course of the axones of the central motor neurones, may give rise to attacks simulating, if not identical with, the cortical attacks described by Jackson:

November 14th, 1898.—J. F. C., age forty-four, locomotive engineer by occupation; father died of cardiac disease at age of seventy-one, having suffered from general tremor for a long time; mother died of cancer of duodenum; sister died of cholera infantum; a brother of dropsy, and at his autopsy tumors were found connected with his bladder. Patient has had ordinary diseases of childhood; no rheumatism, pleurisy, pneumonia or typhoid; denies syphilis. Five years ago suffered from a severe attack of grip, which incapacitated him for three months from attending to his work; since then he has been perfectly well until July 15th, 1896, when he was taken with attacks of vertigo, without headache or vomiting. The dizziness lasted about one week, then passed away. August 15th suffered from an attack of vertigo, with diplopia, which condition lasted several days, when his wife noticed that spasms occurred, beginning always in the left leg, the muscles of the calf being chiefly involved, the foot being sharply flexed. The spasm would extend up the limb, quickly followed by a spasm in the shoulder, the latter being depressed; the forearm was then flexed upon the arm and drawn sharply across the chest. The fingers were flexed over the thumb. At the same time the lower left facial muscles were involved in this tonic spasm. These unilateral spasms were repeated several times each day, following the above-mentioned order, for four or five days, and were followed by weakness of the whole left side. The patient could not recall whether or not the attacks were preceded by numbness, but after the cessation of each attack the whole left side felt numb, which numbness still continues. From September 6th to the 25th the patient continued to work at his occupation. On September 26th he noticed that his left leg was considerably weaker than the right, and that objects held in the left hand would frequently be dropped. This weakness gradually increased, so that in about a fortnight from the onset he could not bear his weight upon the left leg, although he could get about with the aid of a cane. Patient is constipated and has passed urine involuntarily for the past few days. Since the unilateral spasms began he has suffered from fearful nocturnal headaches, and at times has been slightly delirious. At present he is drowsy, but can be easily aroused, and answers questions slowly, but correctly.

Physical Examination — Patient is a short, stout, well-nourished man, with dark hair; height, five feet ten inches; weight, one hundred and eighty pounds. Double ptosis; both pupils moderately dilated, react to light and accommodation; excursion of eyeballs normal; no strabismus; a slight lateral nystagmus, which, according to his wife, has been present for a long time. No exophthalmos; no contraction of visual fields; vision perfect. Optic discs, right side showed beginning neuritis, while that of the left side was well marked. Percussion of scalp elicits no tenderness; left naso-labial fold effaced; left angle of mouth lowered and saliva dribbles from that side. Watch can be heard only two inches away from ear on each side. Examination of ear-drums shows that the loss of hearing is due to chronic otitis media, resulting in thickening and retraction of drum membranes. No anæsthesia of face or scalp. Senses of smell and taste normal. Tongue deviates slightly to the left side. Incomplete hemiplegia of whole left side. Leg and face least affected, arm held rigid, forearm flexed on arm. Muscular development of whole left side seemed normal. Owing to lack of a battery electrical reaction was not taken. Triceps and wrist tendon reflexes exaggerated. No wrist clonus. Patellar reflex greatly increased; well-marked ankle clonus. Plantar, cremasteric and umbilical reflexes absent. Sensation, temperature and painful sense normal. Muscular sense was imperfect, slight tactile anæsthesia in upper extremity; no retardation to the conduction of painful sensations. No trophic disturbances. The exaggeration of the patellar reflex and a rather coarse intention tremor of the upper extremity were the only abnormal symptoms on the right side. No scars; no enlarged glands. Heart and lungs normal. Pulse 100, soft, and easily compressible. Radials and temporals not thickened. The urine had been repeatedly examined by his attending physician, and was found negative. Patient died two days later, passing gradually into a coma.

Autopsy, November 17, 1896. — Rigor mortis well marked. No œdema; post-mortem staining on back and sides. *Head.*—Slight trace of facial paralysis on left side; pupils widely and equally dilated; skull cap of usual thickness; Pacchionian bodies unduly prominent; dura normal; vessels of pia distended. A thrombotic vessel was discovered on the surface of the left ascending frontal gyrus. Puncta vasculosa well marked; the white matter of the centrum ovale normal; the basilar artery and arteries of the circle of Willis were somewhat thickened, but did not contain thrombi; internal capsules and optic thalami normal; ventricular cavities contained a slightly increased amount of fluid. No perceptible increase of subarachnoidean fluid. In the ventral portion of the superior part of the right side of the pons, close to its middle, existed a diseased focus, very vascular, reddish white in color and distinctly circumscribed, about three-fourths of an inch in diameter, and presenting an irregular oval shape, and extending backward and probably implicating the lemniscus. The remaining notes of the autopsy are of no special interest here, save to prove that the immediate cause of death was of septic origin.

In this case we have seen typical attacks simulating those described by Hughlings Jackson, where the lesion was located in the sensori-motor area of the pons. These attacks, usually referred to cortical irritation, may be explained by the hypothesis that the irritating focus in the sensory area of the pons generated sensory impulses, centripetal in character, which, on being carried to the cortex. excited reflexly the discharge of the motor cells, which in turn produced the repeated attacks of tonic spasms. By another hypothesis it might be claimed that the impulses starting from the same irritating focus were carried centrifugally along the course of the motor neurones with the same result.

Therefore, in all cases where Jacksonian attacks occur lesions of the centrum ovale should be borne in mind and further search be made for symptoms which we might expect to find from irritation or destruction of the projection, association or commissural fibres of those areas. In the case at hand of tumor the symptoms present may be all explained as follows: First, the signal symptom of numbness and tingling, and later anæsthesia, by at first an irritation and later a loss of function from compression of the sensory axones. This same irritation probably caused reflexly the motor discharge of energy which produced the spasmodic movements. These same movements might be explained by the near approach of the tumor to the cortex, thus exciting the motor cells into activity, they being located in the third cortical layer. The paralysis may be explained by increase of the tumor through rapid growth, interfering by pressure with the functions of the motor fibres, first, those destined to the arm, and later, those to the leg and face. It is possible in this case that the commissural nerves in the corpus callosum which harmonize the motor areas of both hemispheres may have been involved. The patient was unable to perform bilateral movements, but when first seen his arm was rather stiffly held, and this rigidity, coupled with slight paresis, may have caused this inability. This difficulty in diagnosis might not be so great were the lesion in the centrum ovale of the left hemisphere. In the latter case there would probably have been added agraphia and possibly paraphasia, in the first case, due to the destruction of fibres from the writing center, in the latter case due to the encroachment upon the association bundle, the fasciculus uncinatus, just beneath the island of Reil, which is the bond of connection between the sensory receptive speech center and the motor or emissive speech center. The absence of typical optic neuritis was doubtless due to the lack of sufficient intra-cranial pressure, the growth being rather an infiltration than one likely to produce any great amount of intra-cranial pressure; then its location was such that no great circulatory disturbance could have resulted. There was not sufficient increase of subarachnoidean fluid to excite a pressure neuritis, the result of extension into the sheathes of the optic nerves.

(*To be concluded.*)

THE HISTORY OF MEDICINE.*

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The history of medicine must date back for its beginnings to the advent of the human race, but of the earliest knowledge of mankind concerning the art we can have no record. Even animals have their instinctive practices in cases of sickness or injury. They are observed to use emetics when the stomach is disordered, and antidotes to snake poison are sought by some when their lives are thus endangered. After wounds and hurts, seclusion, darkness and rest are the healing agents which a kind nature teaches the brute are needed. Self-amputations in case of severe injury to a member are not unknown among them. Savages have crude notions concerning the treatment of disease, obscured usually by superstitious beliefs, and yet marking a certain positive advance over the instinctive methods of the purely animal world.

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The traditions and practices of primitive tribes, who are still little touched by civilizing influences, probably afford suggestions of the *modus operandi* of the prehistoric physician, whose profession in the earliest times had not yet become specialized, and who was found to be merely one of the wiser and more dextrous members of the tribe, whose advice was sought on all occasions and for all purposes. For five hundred years in the earliest history of Rome that city was said by an old Latin historian to have been without a physician. In this instance, often paralleled among savage races, healing precepts and rules were generally diffused among the people and handed down by oral tradition. Every warrior could bind up wounds and apply herbs, and healing lotions. Every elderly woman was trained as a midwife. Later, with the evolution of a more advanced social condition, came the distinctive medicine man and priest. Often these two offices were combined in one person, but not always, for, contrary to once accepted historical teachings, among some nations the earliest fragmentary knowledge we possess of the medical profession shows it to have been a separate and independent guild quite disconnected from the sacerdotal class.

In the Homeric poems, dating probably a thousand years before Christ, and referring to social conditions crystallized into accepted practice hundreds of years before, we find that medicine already had a history. It was even then a distinct and organized profession, regarded with respect, and with its rules for treatment and methods in surgery. It is said (according to Daremberg) that the nomenclature of the parts of the body was then substantially the same as that employed many centuries after by Hippocrates, and even now by us. Whether the early Greeks derived much of their knowledge of the art of treating disease from the older civilization of Egypt we cannot positively know. It is probable that they did. Both countries, in the childhood of their national histories, worshiped gods who were supposed to preside over the healing of disease, the functionaries of whose temples were usually devoted to the care of the sick. It is worthy of note, however, that in the Homeric poems there is no sign of the subordination of medicine to religion, nor were the priests there charged with medical functions. Later, in Greece, the sick were certainly brought to the temples of Asclepius, or, as the name is more frequently written, Æsculapius, to be cured.

The earliest known records of medical observations are found in the fragmentary remains of the literature of that most ancient of all nations, the Egyptian. The first mention which is there made of a physician, and, as far as we know, the earliest in the history of the world as now preserved, is found upon a certain tomb in the neighborhood of the pyramids of Sakkarah. The tomb is small and unpretending in appearance, but is said to be remarkable for the beauty and perfection of its inscription. The latter, being interpreted, shows that the tomb belonged to Sekhet' enanch, chief physician to the Pharoah known as Sahura, of the fifth dynasty, who flourished about 3533 B. C. The record describes how this physician healed the king's "nostrils," for which his majesty wished him "a long life in holiness." Upon request of this physician, emboldened by the king's favor, he was granted a stone tomb, and the portion inscribed was set up in the court of the royal palace and inspected daily by the king himself until it was finished and put in place.

This inscription has little value except the interest which it possesses as the earliest authentic record of a member of our venerable fraternity, and because it shows that at that time the profession was recognized and respected in Egypt much longer before the days of Hippocrates than the latter is separated from our own time.

As in Greece, the earliest Egyptian history shows that the practitioners of our art were not confined to the priestly class, as they came to be later. This "lay element" disappeared after a while, with the change from the patriarchal to the more highly organized political condition of the later monarchies, when the priesthood became much more potent, and absorbed the offices of scribe, physician and magistrate, in the community. The first medical writing of Egypt, now known to be in existence, is the "Ebers papyrus," which was written about 1550 B. C. This is said to be not only the earliest known medical treatise, but is also the most ancient *complete* book, in an original edition, now known to modern man. It was written before the Hebrew Exodus, and much of its knowledge must have been current centuries before. The work is complete even to the marginal notes of its owner, who has inscribed his opinions of the prescriptions as they struck his fancy. This papyrus is largely a collection of receipts, but it also contains admirable writings on anatomy and diagnosis. A chapter on the heart, by a writer named Nebsecht, actually anticipates the work of Harvey in regard to the heart, holding it to be the center of the vascular system. It also taught the value and importance of the pulse, being in this respect in advance of the immortal Father of Medicine, Hippocrates, who came hundreds of years later. The writings are so clear and exact in respect to these points as to admit of no doubt in regard to the facts mentioned. The symptoms and treatment of many disorders are also clearly and intelligently discussed. The range of their methods of medication was extraordinary, for not only were the doctors of this period familiar with pills, potions, plasters, enemata and inunctions, but even inhalations were used, a graphic description of the mode of their preparation and employment being given. Bloodletting was practiced, and poppy juice (schepen) and many other drugs were used.

Later, in the days of priestly predominance, rational medicine in Egypt retrograded, and the art could only be practiced under rigid rules and regulations. If the official method of treatment was not followed, and the patient died, the physician was adjudged guilty of murder. At the time of Iamblicus, 363 A. D., the priests of Egypt showed forty-two books which they called sacred, and of which they attributed to the god Thot the author-ship. Thot was identical with the Greek Hermes and the Latin Mercury. The last six books of this encyclopædic collection relate to medicine, and all bear internal evidence of having emanated from many hands at various periods of time. The first book of the six treats of anatomy, the second of diseases, the third of instruments, the fourth of remedies, the fifth of diseases of the eye, and the sixth of diseases of women. The system is remarkable for its orderliness of arrangement and completeness, but possesses little practical value, being dominated by superstition and demonology. These books represented, however, enormous accumulations of practical experience, largely gathered from the archives of famous temples, like those at Canopus and Memphis, where the sick had been taken for ages to be treated. They possessed specialists, even at this age of the world, for the eye, the teeth, the stomach, etc., but they could not amputate a limb, and the most celebrated priests of Egypt were unable to reduce a dislocation of the foot for Darius the Great. They taught frequent bathing, frugal habits, a careful diet, purgation, circumcision and avoidance of the flesh of diseased animals. They were methodical and exact. Every act of life, and almost every function of the body, was regulated; even the act of generation had a time assigned for its performance. Their antiseptic processes for embalming the dead, which preserved bodies mummified for untold ages, have never been surpassed. But still the science of medicine was not progressive in ancient Egypt. Innovation was made criminal, and for more than forty centuries the practice of medicine was at a standstill. The Egyptian character was material and venal. They were not like the restless Greek, bent on the pursuit of knowledge for its own sake, without which progress in science can never occur.

The knowledge of medicine of the ancient Jews was largely derived from the great civilization of Egypt, with which the Hebrews were associated as neighbors or vassals for centuries. Their sanitary rules and observances partook of the nature of religious rites, and are given at considerable length in some of the books of the Old Testament, particularly Leviticus, by their great lawgiver, Moses, who was himself an Egyptian by education. Elaborate provision was especially made for all matters relating to the sexual apparatus, the intercourse of the sexes being carefully regulated, circumcision commanded, and purification of women after child-bearing, menstruation and copulation was strictly enjoined. The Mosaic sanitary provisions in cases of leprosy have never been equaled to my knowledge, outside the best enforcement of modern quarantine. There is much, however, that is absurd and whimsical in the elaborate enumeration of beasts which are to be considered clean or unclean. Of their *materia medica* we know very little.

With the Hindus, as with the early Egyptians, there was an epoch in the history of medicine when the healing art was rational, progressive and successful. In the light of later conditions this seems hardly possible, so marked was the reaction from the earlier activity, and so profound was the lethargy and intellectual stagnation which followed. Practical experience was forgotten and theoretical speculations and subtleties took its place. The priestly cult intermeddled and obtained control in the profession. Once again superstition and its myriad satellites asserted itself in medical history, and charms, incantations and compulsory religious observances took the place of rational medicine. Observation of the stars and the flight and behavior of birds and animals supplanted intelligent diagnosis. Dogmatic theories replaced an exact knowledge of anatomy, and of the fundamental principles of the art.

About 500 years before the Christian era India produced at least one unique and unrivaled medical intellect, who was known by the name of Susruta. He wrote many wise and wonderful things concerning medicine and surgery. He described more than 100 different instruments, the first and best of which he declared to be the hand, and told of the division of the supraorbital nerve for neuralgia, the manufacture of new noses from flaps taken from the forehead, laparotomies, and even suture of the intestines, some of which are not inconsiderable feats in surgery in our day, and were not equaled in any country of antiquity during any portion of its history. I regret that there is not space to quote more from the writings of this remarkable man, who was evidently a genius of the first order. What is known to have been written by him has been preserved in the Ayur-Veda, one of the sacred writings of India. Buddhism, with its noble sympathy and humanity, has done much for medicine among the Hindus, creating hospitals and encouraging all works which give relief to man and beast. There is little profit in considering the decadence of medicine in this unfortunate country. It is a record of incompetence, charlatanry and gross ignorance.

The medicine of the Chaldeans, Medes and Persians, was but a compromise between the teachings of their powerful neighbors in India and Egypt. The character of nationality in none of these countries was sufficiently strong to resist the lateral influences of the greater and older civilizations so near at hand.

The Chinese attribute the invention of medicine to one of their rulers, called Hoam-ti, whose date they place at 2687 years B. C. As his precepts are still followed, their practice is very primitive, and medicine has no history among them, except the record of his teachings. There is no legal regulation of medicine in the country. A chaos of quackery reigns, accompanied by a stupid ignorance and blind reverence for an obsolete authority. Recognized physicians in China have almost no knowledge of anatomy, physiology or *materia medica* in its proper sense. Their surgery amounts to nothing. All bloody operations are condemned, including venesection. Amputations and the direct removal of tumors have been regarded as impossible. Even hernias could not be reduced. They employed cupping, acupuncture and the red-hot button or moxa, and are familiar with fomentations and plasters of various kinds, as well as lotions and baths. Their midwifery does not deserve the name in modern scientific practice. They have advanced but little beyond the domain of savagery in their knowledge of medicine and surgery. For four thousand years the empire has stood still. It is sad and terrible to reflect on the untold millions of lives which must have been needlessly sacrificed among the hundreds of millions of people of this vast nation, during thousands of years, from the lack of an enlightened public sanitation and a progressive medical science.

China is a melancholy example of what excessive and undue respect for authority in a nation may do to retard progress. But was not Europe somewhat similarly dominated by the doctrines and opinions of Aristotle and the Greek and early Roman fathers of medicine, for a period of more than 1,500 years, up to nearly the time of Harvey, during which long time little or no genuine progress was made? The skirts of our own professional ancestors are not altogether free from charges of stagnation and failure to advance, owing to an undue subjection to authority. The progress of medicine has had vast difficulties to contend with. When we consider the distance between the knowledge of the healing art as shown by the South Sea Islanders, on the one hand, and the most advanced exponents of our complicated modern science, on the other, we are awed by the progress shown, but, believe me, the earlier progress was the more difficult. The emancipation from ignorance becomes easier later on.

(*To be continued.*)

THE EXPECTANT TREATMENT OF HEAD INJURIES.*

By GARRET L. HOGAN, M. D.

How often have we stood beside the unconscious form of the victim of a head injury and to the anxious, inquiring relatives of the unfortunate stated: "Fracture of the base of the skull; rupture of the meningeal artery; the case is hopeless; he cannot recover?" How often have we left such a case, adjourning to the confines of our office, and, alone with our conscience, attempted to justify ourselves in deploration of the unsettled condition of a science that has thus far failed to devise means whereby a fearful mortality may be reduced? I undertake the discussion of this topic without promising special novelty, without panting for conquest in distant fields, but with a sincere hope that these few thoughts may, like the modest mountain brooks, find their way through fertile fields and swell the boundless ocean of opinion, which is, however, alas, alike, too often the legitimated resting place for almost criminal neglect and honest endeavor. By criminal neglect I mean in the sense A. Jacobi, of New York, applied the words in an address delivered before the eleventh International Congress, at Rome, Italy. He said: "If over-dosing and over-operating be wrong, and sometimes criminal, is it less wrong to under-operate and under-dose? Indeed, that is done, I am sorry to say, to at least a dangerous degree. If you were to stand by the bedside of a child strangling by a diphtheritic laryngitis, without resorting to intubation or tracheotomy, would you be made less culpable by relying on some theory of your own? It is not enough to avoid legal responsibility; the civil law is mostly on your side. Our law book is the history of our art and the dictates of our heart; both say the so-called expectant treatment has done, and is doing daily, more harm than over-dosing. Our sins are those of omission as well as commission. A whooping cough leading to broncho-pneumonia, pulmonary hemorrhage or convulsion in the fifth or sixth week, while it might have been mitigated or checked before, is an arraignment of the doctor. The self-limited eruptive fevers, measles, scarlatina, typhoid, each of them liable to lead to myocardial changes, heart failure and death, or to mental disturbance, which were not actively treated in time by absolute rest, reduction of heat and moderate stimulation; the pneumonia which, when delirium, cyanosis and dilatation of the right heart became urgent dangers, was not relieved by a venesection; the protracted and hesitating convalescence, with its anæmia and flagging pulse, which was not supported by heart tonics, not '*pro re nata,*' for '*res*' was '*nata*' already, before it was too late forever, are, and must be for life, loads on the practitioner's conscience.

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* Read before the Medical Association of Montana, May 26, 1898.

Some years since, while attending a surgical clinic in a prominent hospital of an eastern city, a surgeon, whose fame has since been heralded over the civilized world, raised his honorable face, beaming with pleasurable pride, and to those assembled said: "Good laudable pus, gentlemen; good laudable pus." On a cot before him was a pallid-faced man, who had sustained a crushing injury to the right leg. Packed in oakum, in a fracture box it lay, bathed in pus, undergoing micro-organic metabolism; an infected neglected wound; a leg doomed to amputation. This clinic was held fifteen years after the immortal Lister gave to the world his discoveries which lifted our profession out of enveloped mystery and empiricism, during a period when reactionism threatened to overthrow and uncertainty prostitute, and started it aright in the grand march of civilization.

Notwithstanding such object lessons, and the brilliant results achieved through modern methods, there are many who still cling to the teachings of the dark ages, and leave cases amenable to surgical treatment to providential care, taking refuge behind that barbaric relic, " the expectant plan." With reference to the subject of this paper, B. Sachs* is quoted as follows: " I would advise deferring operation until there is positive proof of serious damage to the brain, at any rate until after forty-eight hours or several days." What infallible remedial agent have we at our command that we can undo " serious damage to the brain " occasioned by procrastination? Intra-cranial exploration is not necessarily a fatal operation, but certainly of little value after serious damage has been done to the brain.

In the *Philadelphia Medical Journal* of February 12, 1898, Dr. W. B. Loman reported thirty-five cases of injuries to the head and brain. Of this number nineteen recovered and sixteen died; seventeen were trepanned or depressed bone elevated. Of those requiring operation only one died. Of the sixteen deaths reported, the doctor states nine-tenths were hopeless when seen. Many of the hopeless cases read as follows: " On September 11th, 1890, an unknown Italian was found near the Pennsylvania Railroad by a workman, and he was taken to the Cambria Hospital, unconscious and in coma. No response followed external irritation; the pupils were widely dilated, the pulse slow and strong. He remained in this condition for twenty-four hours, when he died. In the examination after death no fracture of the calvaria was discovered. The diagnosis was fracture of the base of the skull." The nineteen recoveries reported read also as follows: " On March 8th, 1892, W. D., an American, aged 19, a workman in the Cambria company's railroad yard, got caught between cars and his head squeezed. As soon as he was relieved he was taken to the Cambria Hospital. When I saw him he was breathing heavily, the pulse was slow, and he could not be aroused by external irritation. On the left side of the calvaria, over the parietal eminence, was a small lacerated wound. After thoroughly sterilizing and shaving his head, I made an examination of the wound with my finger (which, when sterilized, makes the best probe), and found a depressed fracture, which could not be elevated with an elevator, and I therefore trephined with a one and three quarter-inch trephine. Within six hours he was conscious, and continued to improve. He was discharged from the hospital thirty-eight days after the accident, the temperature never going above 101.5°."

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* *Western Medical and Surgical Gazette*, Jan., '98.

Here we have nicely illustrated the point I wish to bring out. Compare the two histories. How do they differ? Why was operative interference pursued in one and not in the other?

I consider Dr. Loman's report a most valuable contribution to the study of head injuries, because he has carefully detailed his fatal cases, while in the recovered class (to use his own words) " the results have justified the means," which is borne out in the splendid showing of one death in eighteen cases where operative interference was employed. Of these eighteen cases thirteen presented lacerated wounds of the coverings of the cranium; the remaining five had either tumefactions or marked depressions, all calling for further investigation and repair. Of the sixteen fatal cases eight presented no external wound, two are doubtfully reported, and in only one was an operation resorted to. The balance were practically killed outright.

Our medical literature is literally teeming with reports of recoveries following head and brain injuries, unfolding histories of lacerated and punctured wounds of the brain and its coverings, including fractures and depressions. This class of cases give a remarkably large percentage of recoveries. They do not largely challenge our ingenuity or credulity; the open wound admits both daylight and the finger, and with these two agents, culpable indeed would be the practitioner who failed to further investigate and repair the injury.

But what about the cases where no solution of continuity exists, where fracture or depression are not discernible, yet grave symptoms, such as unconsciousness, stertorous breathing, dilatation of the pupils, *et cetera,* are present, and each fleeting moment adds to our anxiety and to the gravity of the case? This is the condition that is left to providential care. This is the class of injury that goes to swell the record of surgical incompetency, and compels the statistician to add also death, epilepsy, insanity or paralysis.

It has been stated that 80 per cent. of fatal head injuries are basal fractures, and therefore not amenable to surgical treatment. I am, however, after careful study, convinced that reliable statistics do not bear out this statement. If we are to accept snap diagnoses, depending upon the classical symptoms — watery or bloody discharges from the nose and ear — as conclusive evidence, then this percentage can be maintained; but I believe it has been the experience of all of us that a large proportion of our severe cases present slight watery discharges, and unless bleeding from the accessory sinuses is copious and constant I fail to grasp the diagnostic value of these symptoms as infallibly indicative of basal fracture. Autopsies too frequently shatter such brilliant diagnoses in the presence of extravasated blood from a ruptured blood vessel, between the dura mater and the skull, in the arachnoid space, in the network of the delicate pia mater, or in the ventricles and brain substance, each capable of producing death through pressure upon, and paralysis of, the respiratory center. Intra-cranial pressure, come from what source it may, causes more deaths than compound fractures, notwithstanding the danger of infection of an open wound.

Very few cases of head injuries are so hopeless that we should give them up without exploring the cranial cavity. Failure to prosecute an investigation is evidence of criminal neglect or rank cowardice. Even though you are satisfied that you have to deal with basal fracture, the nose and ear should be carefully sterilized and plugged against extraneous infection. Too much cannot be said upon the subject, surgical cleanliness; failure to maintain strict asepsis means suppuration and subsequent cicatrization, which will surely lead to contraction and secondary trouble that we are powerless to relieve.

That concussion will produce, through congestion and local effusions, symptoms simulating meningeal hemorrhage is unquestioned, but if unconsciousness continues beyond eight or ten hours prompt surgical interference is indicated, if only to relieve intra-cranial pressure.

HELENA, MONTANA.

Clinical and Pathological Notes.

A Case of Insanity of Gestation.

There is an unanimity of opinion by the authorities on the infrequency of insanity during gestation. Kellogg gives 1.5 as the percentage, and the records of the West Riding Asylum show a frequency of 0.6 per cent. It is true that insanity at this period is not often diagnosed on account of the trifling mental disturbances which, being rather expected, are regarded with little concern.

The following case admitted to the Utica State Hospital was characterized by delusions of persecution and suspicion, hallucinations of sight, hearing and taste, incoherence of speech, restlessness and negligence of personal appearance.:

M. E., æt. 25, admitted April 25, 1898; primipara. Father, mother, three sisters and a brother died from consumption. She was one of eleven children, of whom three were deaf and dumb. Close questioning failed to reveal any cases of insanity in her family. During the past three years patient has lost by death her father, three sisters and one brother. After her father's death she had to support five brothers, and worked very hard. She has always been well, and was considered the strongest of the family. She has had no cough nor any symptoms of tuberculosis.

Last June she was married, and continued to care for her brothers, one of whom, however, was very ungrateful, and caused her much trouble, and it was after a quarrel with him that the first evidences of mental disorder were noticed. This was late in December, and during the third month of pregnancy. Her husband stated she " raved " all night and talked " wildly." She seemed to recover, and he observed nothing until February, when she would not remain in bed, declaring that the bedclothes were on fire. After this she acted strangely, finding fault with all bills sent her and talking foolishly about them. She became suspicious, and had delusions that a neighbor was trying to poison her. A few days before admission to the hospital she imagined a sick woman was in bed with her, and broke four fans in her energetic attempts to comfort her. The afternoon before admission she sent for a priest, and made him kneel and pray for a long time, and then turned him out of the house. That night she would not go to bed, and tried to chase the devil out of her room.

Mental Examination. — Patient is restless. She is much confused, and talks disconnectedly and incoherently, as if in answer to imaginary voices; will answer simple questions occasionally; makes grotesque gestures with arms and hands; is depressed and cries easily; claims she can detect poison in the food; claims the devil is in her room, that she saw him. She mistakes the identity of persons around her.

Physical Examination. — On account of resistance by patient examination is incomplete. Pulse 106, regular, full and compressible. Temperature 99.4°. Respirations, 22. Eyes somewhat prominent; pupils unequal, react normally. Tongue coated and tremulous. Thyroid not enlarged. Appetite is poor and sleep deficient. Chest not thoroughly examined. Slight dulness at left apex. No cough or expectoration. Abdomen prominent and tense. Fœtal movements could be seen and felt. Fœtal heart sounds in right inguinal region. Bowels constipated. Examination of urine revealed a slight amount of albumin and casts, hyalin and granular.

She was given compound licorice powder at bedtime, but had to have enemas every few days. For the first few days she required constant attention, and was kept in bed. She did not sleep well, and often a glass of hot milk would put her to sleep, although sedatives were occasionally administered. At times she would answer questions and talk coherently, but was very restless, walking up and down the ward talking to herself and trying all the doors. She insisted there was poison in her food, and would smell it before she would eat. Often she skipped a meal. At times she would cry a great deal, and on more than one occasion threatened suicide. She worried because " something awful was going to happen to her people." In May it was noted that she would press on gravid uterus with both hands if not constantly watched. Will not keep dressed, and is very untidy, and is very suspicious of physicians, as she says she heard they were going to operate upon her.

June 10. — She continues restless and confused; is destructive and is filthy in habits; complained of cramps and nausea, but has not vomited. *June 16.* — Is untidy about her personal appearance; wanders aimlessly around ward; has not complained of "cramps" since last note. Circulation is poor; hands and feet cold and slightly cyanotic. Urine, sp. gr., 1014; a trace of albumen; hyalin casts; pus. *June 22.* — Is eating better, but sleep is poor. Occasionally complains of cramps, which are relieved by enemas. Is up and dressed.

June 23. — Is restless and apprehensive. Went to dining-room for supper and ate well. Has not complained of pain to-day. 10:30 P. M. — Would not remain in bed, and complains of cramps. 10:45. — Was given an enema of soapsuds and had a good movement. The nurse noticed a discharge from vagina streaked with blood, and sent for physician. Vaginal examination revealed that the head was engaged and the bag of water had ruptured. Pains were infrequent and irregular, and seemingly not severe. After an hour, as little progress seemed to have been made, a long confinement was anticipated. Shortly afterwards, however, she rose in bed, and a well-formed male child weighing 6½ pounds was born before anything could be done, and with seemingly little effort on her part. The placenta was removed intact by Crede's method in half an hour. The perineum was badly lacerated, but the tear did not involve the sphincter ani. Several stitches were taken with difficulty, as patient was very restless. All was over in about two and a half hours. Patient slept two hours that night, and did not complain of pain in the morning. The child was removed from the hospital after a couple of days. The puerperal period was uneventful. The strictest antisepsis was observed, and the lochia never became foul. The highest temperature was 100.7°, on the fifth day, but was normal the next morning. Breasts were kept dry.

July 6. — Sat up in bed to-day. Will talk rationally at times and ask about the child, but she continues to hear voices. *July 12.* — Is eating well. Patient is quite constipated. Licorice powder given last night, and patient soiled the bed. Is confused and incoherent, and did not know her husband to-day. Is now dressed and quite restless. *July 22.* — Is confused and dazed.

Does not appreciate time, and says the baby was born "ten days ago." Has auditory hallucinations. Still insists poison is put in the food. *July 25.* — Is worrying to-day about some danger she claims is going to befall some of her people. Will not employ herself, and wanders about the ward. *August 10.* — For the past few days has been brighter and more tidy about her appearance. Is still confused. Was reading a paper for some time, and when asked about the war, asked, "What war?" and appeared to be ignorant of its existence, although she seems to be interested in the newspapers. At the present time she is not eating well and is anæmic. Urine does not contain albumin or casts.

This case presents several points of interest. The woman was a primipara. The mental symptoms appeared early and grew more pronounced, and did not clear up towards the end of pregnancy. The delivery was rapid, with little pain, the time from rupture of the bag of waters to the birth of placenta being under three hours. There was slight effect of delivery and puerperal period on the mental state.

Dr. Savage calls attention to the fact that more mental disturbances may occur with male than female pregnancies.

The question of premature delivery was discussed on her admission when albumin and casts were detected in the urine, but a Fabian policy was adopted and justified by the results. The child weighed 6½ pounds, and is at present in good health, and has borne the intense hot weather very well. The head was well formed, and showed no stigmata of degeneration, and the child is called a "bright" baby.

HARRY L. K. SHAW.

UTICA STATE HOSPITAL, UTICA, N. Y.

Editorials.

Medical Albany Militant.

The representation of Albany medicine in the war with Spain has been altogether creditable. Dr. Balch, Major and Surgeon, has been with the Second N. Y. Vols.; Dr. Davis, holding like commission, is with the First N. Y. Vols., now stationed at the Sandwich Islands; Dr. Macdonald, appointed

Brigade Surgeon, with the rank of Major, by the President, served a month at Fort McPherson during the relief of the wounded from the three days' battle before Santiago; Dr. Edgar Vander Veer has also served as Acting Assistant Surgeon at Fort McPherson throughout the war; and Dr. Robinson is attached to the Hospital Corps of the First N. Y. Vols.

Dr. Macdonald is the first to return to Albany, after the experience with the wounded at Fort McPherson, and gives his testimony upon the injuries inflicted by the various kinds of weapons. Of three hundred wounded whom he attended, one only died from the direct effect of his wounds. The work of the surgeon was greatly facilitated by the use of the X-rays, and the probe was practically discarded. Some delay was at first experienced in obtaining a supply of dressings, and Dr. Macdonald telegraphed home for instruments and dressings from the private hospital directed by Dr. Vander Veer and himself, obtaining in two days enough to carry his work along until the arrival of governmental supplies. It was shown that the Mausers and Krag-Jorgensen rifles are less dangerous than the Springfields, wounds from the latter being far more destructive to the tissues. In this connection Dr. Macdonald states:

> "Many of the men received at Fort McPherson had not had their wounds dressed from the temporary field dressing at Siboney until they arrived at the hospital at Fort McPherson. These wounds were covered by the first-aid packet supposed to be carried by every soldier in active service. Nearly half of the wounds were in good condition, free from suppuration, and with no evidences of blood poisoning. The remainder, with one exception, presented minor degrees of septic infection, none of which proved fatal, except in one instance, which represents the mortality directly traceable to wounds at Fort McPherson.
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> "As fast as possible primary dressings were done in all the cases, some of the wounded, even after their delivery at Fort McPherson, being still blood-stained from their primary wounds, and yet clothed in the garments which they had worn in the trenches before Santiago.
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> "The variety of wounds presented was very great, presenting, under ordinary conditions, all degrees of severity. We had penetrating wounds of the abdomen, of the chest, and a multitude of compound fractures due to gunshot injuries. By hard discipline and practically continuous labor within a period of four or five days, the condition of the wounded entirely changed for the better, and we were quite rewarded for our hard labor by the improvement of our patients. At this time we organized in one of

the pavilions of the hospital a dressing station for the treatment of the ambulatory wounded, and not infrequently 100 cases would be dressed at this station during the morning. As soon as the soldier's wounds presented conditions which would allow travel, he was given a sixty-day furlough to return home, latterly the government furnishing transportation for him. In this way we were enabled to deplete the number of the wounded in the hospital very rapidly, frequently giving twenty or thirty a day a furlough. These men are now distributed over the country from Maine to California under the care of civil surgeons. At the time of my leaving the post, August 7, scarcely 15 per cent. of the wounded remained in the hospital.

"The behavior of Spanish projectiles, the Mauser, and the brass-jacketed bullet of 43 calibre in the tissues has been peculiar, and for which no previous experience has furnished a guide to the surgeon. Not infrequently has the bullet passed through the body and left the jacket embedded in the tissues, while the converse is equally true, that the jacket has passed through the body and the bullet remained in the tissues.

"The X-ray apparatus has been of great value in establishing these conditions and permitting their intelligent treatment. It is generally understood that the Mauser bullet is a steel-covered projectile of small (27) calibre. From previous experimental work it was assumed that in certain areas it produced very destructive wounds. In the main this is not true. Among the wounded who immediately survived before Santiago, none of the terribly destructive effects of these small-calibre and high-velocity bullets were observed, nor was their power of penetration so great as had been anticipated by experimental research. This may have been due to a deterioration of the smokeless powder used by the Spaniards. So near as I can judge, without particular examination of the records, approximately 20 per cent. of the Mauser bullets lodged in, instead of penetrating, the body; as a rule the wounds of entrance and exit were small and practically equal. I saw a number of men with penetrating wounds of the chest and abdomen able to walk about two weeks after their infliction, apparently suffering no particular disadvantage from having received these supposedly dangerous wounds. All of these men had received no surgical attention beyond a primary or field dressing, and in none of them had any operation been performed. Had the men received wounds under similar circumstances from the late Springfield rifle, nearly all of them would have been dead from the effects of the wounds. The Mauser has no great stopping power.

"It was not unusual to see men in the hospital with a second or third penetrating wound made by a Mauser bullet. Usually one missile from a Springfield rifle, when it hits, is sufficient to dampen the ardor of a fighting man. The Mauser is a more humane and less disastrous weapon. The brass-jacketed bullet, also known as an explosive one, is a projectile of much larger calibre (43), and far more destructive to men hit. The experienced eye soon permits the surgeon to determine at once whether the wound had been inflicted by the Mauser or brass-jacketed bullet. The wounds of entrance or exit are greater, the laceration of the wound track far more pronounced and destructive. The wound of exit may frequently be one of two or three inches in diameter, tearing away large masses of tissue, with fragments of bone. Fortunately, only a small portion of the Spanish army was armed with these rifles. I saw no evidence from the bullets removed that they had been dummed — that is, the jacket filed off at the end of the projectile, which gives it an explosive action."

Physicians' Accounts.

An editorial communication upon this subject graces the *American Medico-Surgical Bulletin*, originating, we are informed, in a discussion recently held at the Philadelphia College of Physicians. It appears that physicians are often at great disadvantage when presenting claims in courts of law from the inaccuracy and carelessness displayed in bookkeeping, it having been shown that "nine-tenths of the physicians' books, at least as they are kept in this part of the country, are of no value whatever in an Orphans' Court, and especially is it true that the ordinary method of rendering the physician's bills, 'for professional services, so many dollars,' is in open defiance of the laws of the country.

"If it be desired by any doctor to have his accounts kept in such a way that they shall bring a smile of approval to the stern judicial countenance, he should keep a day-book, in which should be entered the particulars of the visit, when it was made, how long it continued, what was done and what medicines were given, the exact value according to the system of charging adopted of such medicine, the charging together in a single sum for 'professional services and medicines' being a 'lumping' of charges sufficiently irritating to the judicial mind to produce apoplexy in a testy judge, and sure to be thrown out. Probably few successful, and therefore busy and overworked physicians, would be willing to become a slave of the day-book, and to try in the wee hours of the morning to satisfy the judicial interrogators. Certainly the writer of the present article would rather be thought a fraud by the Orphans' Court judges and lose various bills than spend such a life of toil at the galley-oar of accounts.

"The case of the surgeon is still more difficult. The details of his work are so great and elaborate that the amount of bookkeeping required, according to the advice which we have heard given by lawyers of repute, would be overwhelming. It is asserted that the surgical book of original entry, to be satisfactory, should state how many visits were paid before and after the operation, and should also show exactly what was done and the time consumed in such visits, also the details of the operations, how long it took for etherization and other preparation, what amount of ether and other materials were used, and the value of such ether and other materials, what was done at each stage of the operation in detail, and a history of the final after-treatment; also the number of assistants employed, and exactly what each assistant did. In fact, if it took an hour for the operation, it would probably take an hour and a half for its entrance in the book of entry.

"Under all the circumstances, it appears rather strange that the physicians are paid as well as they are, not that they lose so many accounts. The proper measure for decreasing the percentage of losses seems to us to lie not so much in proper bookkeeping as in the approximation to a cash basis. * * *

"All this is sufficient to make an old-fashioned physician shudder. We shall never forget the hours of unrest and anger produced in one of the old-time doctors by a patient having personally asked him for a bill instead of writing a note. 'Just,' as the old gentleman said, 'as if I were a carpenter or a mason.' Trade methods in their best aspects are, however, after all only proper methods of dealing between man and man; and if the profession as a profession desires to collect its just pecuniary dues, such trade methods must be to a greater or less extent adopted. Long credits ought to be abolished. The right procedure for a doctor is to render his account at least every six months, and better every three months. A few of our leading and progressive surgeons in Philadelphia are now having their bills sent in monthly, with, as they assert, a very good effect upon their incomes."

Scientific Review.

Critical Review of our Knowledge of the Internal Secretion of the Thyroid Considered in the Light of Recent Experimental Physiology, and in its Pathological and Therapeutical Aspects.*— Claude Bernard, in a paper entitled "Rapport sur les progrès et la marche de la physiologie generale en France," and published in 1867, first made use of the convenient generalization, internal secretions, and, moreover, made a fairly clear distinction between the internal secretions and external secretions in the general modern conception of this term; but for its nice elaboration and popularization in physiological nomenclature we are indebted to Brown-Séquard, who gave it currency in his numerous publications since 1891.[1]

The conception of the essential idea conveyed by the expression is considerably older than the inception of the term; Haller, as early as 1776, evolved this idea for the thyroid gland, and Schmidt, in 1785, for the adrenals. In 1869 Brown-Séquard conceived the importance of the physiological role of these secretions, but it was only subsequent to 1889[2] that his speculations took the form of physiological truths as the result of the experimental effects of injection of extracts of the testis. From this time on the internal secretions have occupied a paramount position in the domain of experimental physiology, in the interpretation of tissue metabolism, and in the clinical significance of organotherapy, as well as serving in the elucidation of some obscure pathological processes. The expression, internal secretion, then, as a result of the evolution of physiological research and precise experimental demonstrations, is at present regarded as meaning certain elaborated products, the result of glandular cell activity from material furnished by the blood and passed back to it or the lymph to subserve some function or special nutritive role. The exact nature of the function or purpose of these secretions, it will be seen later, is not always perfectly clear.

The ambitious hope of the therapeutical possibilities of the use of extracts from these so-called ductless glands has greatly stimulated experimental activity and directed the thought of physiologists to the solution of the functional relations of these glands and their secretions to the animal economy, and also directed the attention of pathologists to the importance of the absence of the secretions in explaining certain diseased conditions. This hope has been largely realized with the use of the thyroid extracts in thyroid disease; the felicity of this result is the outcome of rigorous scientific researches extending over more than a decade; and future success along these lines must, of necessity, depend on similar lines of investigation.

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*This critique is largely based on the papers read at the fourth Congress of American Physicians and Surgeons, held at Washington, D. C., in May, 1897.

There has been some misapprehension, which for a time led to confusing results as regards what is included under the term thyroid tissue. If we include under this term not only the thyroid body, but also the accessory thyroids and the neighboring parathyroids, then the complete removal of this tissue in man and the related mammals will be followed usually by a series of nutritive disturbances, that, if not immediately, are ultimately fatal in their effect. The reintroduction of this tissue into the body in such cases results in an amelioration or complete disappearance of the phenomena of nutritive implication. The fundamental facts of the untoward and fatal effects of thyroidectomy were made known by Schiff[4] in 1856; and the therapeutic value of the thyroid tissue arose naturally from the grafting experiments of Schiff in 1884,[5] and the subsequent experimental researches of Vassale[6] and Gley[7] upon injections of thyroid extracts.

The natural inference and logical conclusions of the pernicious results of experimental thyroidectomy and the success of the injection of thyroid extracts in this condition were that these phenomena were dependent on the existence of some nutritive substance in this tissue. This material has been revealed by the chemical and clinical investigations of Baumann[8] and Ross[9]. Baumann succeeded in extracting a substance called thyroidin or iodothyrin, which is especially characterized chemically by its great resistance to ordinary decomposing agents. It is a non-proteid cleavage product of a more complex body naturally present in the gland, and characterized by containing both iodine and phosphorus. Aqueous and glycerine extracts of the gland contain iodothyrin or the mother-substance, and they do not take up all of the substance. Extraction of the gland with 0.75 per cent. sodium chloride solution, frequently repeated, removes all of the iodine-containing substance, and the residual tissue has little or no effect upon goitre. That iodothyrin possesses all the peculiarities associated with thyroid therapy there can exist little doubt, as shown by the experiments of Ross[10] upon animals, and the clinical studies of Ewald and Bruns.[11] Histological research indicates that, so far as the thyroid bodies proper are concerned, the secretion is contained in the colloid material present in the interior of the vesicles; the mechanism of secretion consists in a rupture of the vesicular partitions, permitting the escape of the material to be discharged into the lymph spaces.

Physiological explanation of the manner in which the thyroid secretion acts upon the economy is entirely speculative in its attempts; solution of this problem must necessarily seek an experimental basis. But in the meanwhile two hypothetical arguments have been advanced by different writers: one, which gives credence to the view that the thyroid secretion has an antitoxic function, which in some inexplicable manner neutralizes certain poisonous products, the result of tissue metabolism elsewhere in the organism. The absence of the internal secretion from the thyroid gland permits the concentration of this product of retrograde metabolism in such a manner as to result in a condition of auto-intoxication, as manifested by symptomatic disturbances similar to those observed following complete extirpation of the thyroid tissue. The other conception, on the other hand, leans toward the assumption that the secretion regulates metabolism, perhaps largely that of the nervous system.

In view of the fact that neither the one nor the other of these hypotheses has the slightest basis of a demonstrable nature, criticism would be superfluous.

Until very recently the functional relationship between the thyroid tissue proper and the parathyroid tissue has claimed the attention of physiological experimenters. The parathyroids, which are found in apparently all mammalia, are attached to the external or posterior surface of the thyroid, whilst in some animals there is an additional one on each side. Histologically, in structure they are very dissimilar to thyroid tissue, their appearance corresponding very closely to embryonic tissue. Furthermore, there is much which tends to incline opinion to the acceptance of the view of structural and embryonic dissimilarity of the two tissues.

Gley,[12] in 1892, was the first to point out the greater functional activity of the parathyroids over the thyroid tissue proper. He demonstrated that thyroidectomy of the thyroid proper does not result in the classical symptomatic presentation and effect. On the other hand, he showed that removal of the thyroid tissue with the parathyroids resulted fatally. More recent investigation has thrown more light upon the physiological activity of the parathyroids. Vassale and Generali[13] in removing all of the parathyroids obtained uniformly fatal results in spite of the fact that the thyroid proper was permitted to remain uninjured. The physiological supremacy of the parathyroids has received confirmation in the experiments of Rouxeau,[14] Gley,[15] Welsh[16] and Edmunds.[17] The conclusions of Moussu[18] and Hermann Munk[19] are somewhat at variance with those of Gley, Vassale, Generali and Rouxeau. In a general way Moussu attempts to define the difference in function between the thyroid and parathyroid tissues. According to him, loss of the thyroid proper is followed by chronic disturbances of nutrition, which he designates as myxœdematous or atrophic cretinism; complete removal of the parathyroid tissue causes symptoms similar to those observed after complete thyroidectomy. His conclusions upon the production of atrophic cretinism should be accepted only with much hesitancy, since they have received absolutely no firmatory verification. Munk, on the other hand, in his recent paper, denies that the parathyroids have any functional importance whatsoever.

Pathological anatomy, although of distinctly less demonstrative utility in diseases of the internal secretions, offers, however, indirect substantiation of their existence by defining the character of the anatomical implication of the diseased glands. Microscopical study of the thyroid has yielded particularly fertile results in myxœdema and cachexia thyreopriva. In almost every case in myxœdema there is discoverable a well-marked atrophy of the thyroid, generally quite extensive, in which the gland cells are replaced by fibrous tissues. Instances of myxœdema without some involvement of the thyroid, anatomically, may occur, but literature is strangely silent upon this point. Dr. Adami[20] has observed a typical case in which no change was found in the thyroid. Another somewhat similar case has been reported by Codd.

The theory of the hypersecretion from the thyroid as the causative factor of the symptomatic manifestations of exophthalmic goitre receives some support, but by no means incontrovertible evidence. The existence of hyperplasia of the thyroid parenchyma in this disease, as Greenfield has shown, receives general acceptance among pathologists. From this fact some have deduced that there exists a corresponding increase of the internal secretion. The probability of this assumption is considerable in the presence of other evidence. Upon this point the words of Prof. Adami[21] are very *a propos:* " There is, however, an important fact in favor of such a deduction, namely, the strong likeness between the primary glandular changes in Graves' disease and those described by Halstead and others as occurring in the compensatory hyperplasia of the thyroid after removal of large portions of the gland; and if, together with the anatomical changes, we consider the favorable effects which so often follow removal or destruction of the hypertrophied gland in this disease, or diminution in the blood supply of portions of the same — of operations which must lessen the internal secretion — it is difficult to arrive at any other conclusion than that in exophthalmic goitre there is increased internal secretion, and that this plays a singularly important part in the development of the symptoms."

Jaffray and Achard[22] have pointed out that the symptomatic evolution of cases of parenchymatous and adenomatous goitre is at times strikingly similar in presentation, and they, with Vanderwelde and Boeuf, sustain the opinion that there is nothing anatomical to distinguish exophthalmic goitre from the other form. That the one condition may pass into the other is well known from clinical experience, but the contention of the anatomical non-differentiation of the two processes is not supported by a consensus of opinion. Instances of Graves' disease in which there was an absence of hyperplastic development of the thyroid are extremely infrequent. Jaffray and Achard have reported a case of this nature in which there was no enlargement of the gland, and which, although not normal in appearance, nevertheless showed histologic changes entirely dissimilar to Greenfield's descriptions. Buschan[23] believes in the existence of exophthalmic disease without goitre, an opinion certainly not based on anatomico-pathological evidence.

The physiological demonstration of the role played by the thyroid tissue, and the pathological comprehension of the character of such diseases as cretinism, both the sporadic and endemic, myxœdema and acute athyrea following ablation of the thyroid, have resulted in an intelligent application of therapeusis to these diseases based on the brilliant results of experimental research.

Myxœdema, goitre, sporadic and endemic cretinism, and exophthalmic goitre have been subjected to treatment by the use of thyroid extracts, and in such numbers as to justify the formulation of practical rules regarding this treatment. In myxœdema the treatment yields favorable results, and a cure can be effected even when the duration of the disease has extended over many years. A discontinuance of the medication, however, in more or less time, causes a return of the original trouble, showing that the extract does not stimulate the gland tissue to increased activity, but merely replaces the essential elements which are normally elaborated by the normal thyroid tissue. The regulation of the dosage in this class of cases has been shown to be subject to variation, but its regulation is a matter of some importance in the post-myxœdematous stage. The dose, even when considerable, at this time, it has been found, must be repeated at least once a week, if not oftener, to maintain the thyroidal equilibrium.

It is with cretinism, perhaps, that opotherapeutics have yielded the most astonishing and impressive results — veritable transformation of brute monstrosity and mental nonentity into the semblance of human form, and to the capabilities of intellectual progression. With the weight of present evidence it is safe to say that a child, submitted to the thyroid treatment early, and systematically and rationally continued, holds out good promise to attain the development of a healthy adult. Cases in which the condition of cretinism has lasted longer without treatment are less hopeful as far as complete cure is concerned, but the amelioration may be considerable.

In instances of exophthalmic goitre, *a priori*, the prognostic outlook is bad when treated with extracts of the thyroid tissue. On the other hand, in the cutaneous affection, psoriasis, some little measure of good has been observed, especially by Byrom Bramwell.

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State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D.

Medical Inefficiency in the Army. — For the past six weeks the lay press has been vicious and persistent in its attacks upon the medical department of the army. It has dissected and criticised its acts to such a degree in a spirit of accusation that the department has been forced to defend itself with cost to its dignity. The medical press has been compelled to take cognizance of some of the newspaper stories, and asked explanations of some of the so-called scandals, which they have received to the satisfaction of the thinkers and the fair-minded of the people. These newspaper tales, amplified and spread about the country, have aroused a general feeling of indignation among the masses against the surgeons in charge of the wounded and sick in the army, and against the medical department as a whole. The feelings of every one are naturally in sympathy with the suffering soldiers at the front, but these feelings should not be permitted to warp judgment or create a tirade of censure against those in charge of the suffering. There are always two sides to a story, and in the end, in this case, we doubt not that the defense will be as strong as the accusation.

In the first place, we must not forget that our standing army, including its medical department, before the present war broke out, was a diminutive body compared with that of other countries; a thoroughly efficient, well drilled and brave body of men, but small nevertheless. Now, the medical department of this small army was suddenly called upon to equip and drill a force of volunteers to go immediately into active service, where they must care for the sick and wounded of an army more than five times the size of the original army, in a trying climate or under trying conditions, all with a speed which, in looking back upon, seems almost miraculous. If hitches occurred, or mistakes were made, would it not be more just to attribute them to the natural imperfection of a hasty organization or to inexperience than to call it "scandalous inefficiency," and promiscuously blame the medical officers or volunteers, or both? It seems to me that, so far, the problem has not been dealt with in a fair or impartial spirit by the people.

Dr. Paul R. Brown, Major, U. S. A. (retired), in an article on the organization of the surgical personnel of an army division (12,000 men) and its duties in time of war, published in the *Medical Record* for July 2d, says: "I am of the opinion that the surgical personnel of a division containing 12,000 men should be a trifle over 4%, less than this percentage not enabling it to cope successfully with an average number of casualties in battle." Thus, the surgical personnel of a division should consist of 61 surgeons, 41 regimental and 20 non-regimental (one surgeon to about 200 men), 445 enlisted men, transport train consisting of

40 ambulances, 16 hospital wagons, 8 medical supply carts and 12 pack mules. In the *Journal of the American Medical Association* for July 9th, in an editorial, is given the actual personnel called for, by existing laws and orders, for an army corps (25,000 men, or two divisions), 89 surgeons and 929 enlisted men, with transport train in comparison. These figures are in accordance with Dr. Brown's ideas, allowing for the subsequent addition of 20 non-regimental surgeons for each division, which would bring the number up to 129, or one surgeon to 200 men. This seems none too many when we think that in the average hospital a staff of three or four men seldom has charge of more than 100 patients. In view of the successful organization of the medical department in the army under the most difficult circumstances, and the fitting up of such model hospital ships as the "Relief" and "Solace," we cannot justly censure any one for negligence in preparing for active service; in fact, the foresight of the officers of the department has been wonderful throughout.

The principal points of attack have been the alleged inefficiency of the medical organization and the lack of medical supplies at Siboney; also the wretched condition of the transports. The *Outlook*, a weekly periodical, in articles and editorials, has been most scathing in its denunciation of the care of the wounded at Siboney, never once taking into consideration the unsurmountable difficulties the medical department had to contend with; the rapid spreading of the troops over a large area immediately after landing, making it impossible to establish hospitals within easy distance of the lines; the short time after landing that actual battle began, and, most potent of all, the fact, stated by Dr. Edward L. Munson, Captain and Surgeon, in a report to Surgeon-General Sternberg, under date of July 29th, that "had the medical department carried along double the amount of supplies, it is difficult to see how, with the totally inadequate land and water trasportation provided by the quartermaster's department, the lamentable conditions on shore could have been in any way improved."

His conclusion offers another consideration which should not be lost sight of: "It is desired to emphasize the fact that the lamentable conditions prevailing in the army before Santiago were due to the military necessity which threw troops on shore and away from the possibility of supply without medicines, instruments, dressings or hospital stores of any kind."

Concerning the sailing of the transports "Seneca" and "Concho," Surgeon-General Sternberg states that if the vessels were inadequately supplied, the medical department is in no way responsible. Judging from the position that the government has taken, it has absolute confidence in its medical officers. After reading the letters of Drs. Sternberg and Senn in the *Medical Record* for August 6th, every unprejudiced mind must agree with the editor of that paper, "that at least the medical department of the army is not to blame for any dereliction of duty or lack of preparation for emergency."

Let the "stay-at-homes" do a little fair thinking, and they will soon begin to wonder whether they could have done as well in the field of action, and in thinking they will become less uncharitable.

In conclusion, we have but one suggestion to offer, which is in the nature of a plea: that our government shall recognize the necessity of a much larger personnel in the medical department of the army, and that it give the Surgeon-General the power, by law or order, to bring that department up to the highest numerical, scientific and executive standard of the hour.

Small-pox in New York State. — A recent bulletin of the State Board of Health of New York gives the information that a peculiar epidemic of small-pox has prevailed in the central and western part of the State during the spring months.

A traveling theatrical troup, containing a mild case of varioloid contracted in West Virginia, had visited twenty places in New York State before it was detected. The troup was arrested in Geneva, May 21st, and placed in quarantine. From this source of infection a total of forty-nine cases of varioloid developed in ten towns, some of which had been visited by the troup.

A large epidemic, extending over a great area, was only avoided by the fact that the troup traveled in its own cars and had its own exhibition tent, and by the prompt action of the State and local health authorities. Had the troup played in theatres and lived at hotels the epidemic would have been much more extensive and difficult to control.

There were no fatal cases. The secondary cases in infected families were generally more severe than the primary. Some of the cases were of a moderately severe type. No cases from new localities have been reported since the first of June, and the last case was reported about the first of July.

Book Reviews.

Outlines of Practical Hygiene. By C. GILMAN CURRIER, M. D. Third edition, revised and enlarged. E. B. Treat & Co., New York.

The recent establishment of a chair of hygiene in many of our universities has led to the necessity for the publication of a text-book on this subject. The one in hand, now in its third edition, is designed for this purpose; also for general reading and instruction. The text is simple, confusing technical expressions are avoided as much as possible, and explained when used, making it valuable and comprehensible to the layman and less cumbersome to the student.

It consists of a compilation of minor hygienic principles governing modern life, with long articles on the general and more important sanitary subjects, such as schools and their influence on health, heating, lighting, ventilation, foods, diet, water and water supplies, bathing and personal hygiene, plumbing, sewage and garbage disposal, disinfection, etc.

In the present day, to assure good health and freedom from lurking infections of all kinds, some knowledge of general hygiene is necessary. For this reason a volume of this character should be especially valuable for general use, as it is replete with instructions and suggestions for the prevention of disease from a hygienic standpoint.

The time has come, also, when the general practitioner is looked upon as the instructor of hygienic principles in his families; for this reason hygiene is now taught in medical schools. Older practitioners, who have not had the advantages of a modern technical training in the science of hygiene, will find this little work invaluable. H. S. P.

The Office Treatment of Hemorrhoids, Fistula, Etc., Without Operation; Together with Remarks on the Relation of Diseases of the Rectum to Other Diseases in Both Sexes, but Especially in Women, and the Abuse of the Operation of Colostomy. By CHARLES B. KELSEY, A. M., M. D. E. R. Pelton, Publisher, No. 19 East Sixteenth street, New York. 1898.

This book contains three lectures upon the subjects described in the title, giving Dr. Kelsey's reasons for preferences in treatment, operative and otherwise, based upon his long experience in special work. Methods of procedure are not described.

Medical News.

TROY HOSPITAL. — The organization of the pathological department has been perfected by the appointment as pathologist of Dr. George Blumer, and, as assistant pathologist, of Dr. H. O. Fairweather. A complete pathological outfit will be secured, and the equipment will be modern in every respect.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL. — The seventeenth Annual Announcement for 1898–99 has just been issued. It shows that 523 practitioners of medicine have attended its courses during the past year. They came from the various States of the Union and the Dominion of Canada. There were ten physicians from foreign countries, two of these being from India and one from Japan. Only 96 were from the State of New York.

Current Medical Literature.

The Rapid Diagnosis of Diphtheria, Especially Conjunctival Diphtheria. — Heinersdorff, in the *Centralb. f. Bacter., March, 1898,* gives the results of his work with Neisser's stain for the rapid diagnosis of diphtheria. The stain is a double one of acetic acid methylene blue followed by Bismarck brown, the diphtheria bacilli being colored brown whilst the granules, which are usually seen at the ends of the organisms, are colored blue. The author used the stain particularly in cases of conjunctival diphtheria to differentiate the diphtheria bacillus from the xerosis bacillus which so closely resembles it, and which is so often a normal inhabitant of the conjunctiva. After trying the stain in a large number of cases the author comes to the following conclusions:

(1) If the double staining gives positive results in 9–16 hour old cultures with the typical form of the bacillus and the stained granules, we are dealing with a virulent diphtheria organism.

(2) With the xerosis bacillus under the same conditions the color reaction is negative. After twenty-four hours the xerosis bacillus may show the granules, but even then the staining is usually not typical.

(3) The above conclusions only hold good for fresh cultures; on old media the results are different as here the diphtheria bacilli may not show the staining until later than sixteen hours, and the xerosis bacilli may show it earlier than twenty-four hours.

The author states that this method of rapid diagnosis has been used with success in the Breslau eye clinic for some time, and that it has been the basis for the administration of the antitoxin in that clinic. In connection with the use of the stain animal experiments were also made, and in no instance was the animal experiment contradictory to the staining reaction. G. B.

Senile Gangrene. — Jones, in the *Medical Chronicle, January, 1898,* claims that persistent coldness of the feet, perverted sensations and especially cramps in the calves are premonitory symptoms of gangrene.

The treatment of the gangrenous process is local and general. The skin of foot and leg are to be thoroughly cleansed, dusted with iodoform, covered with sublimate wool and tightly bandaged.

Poultices, fomentations and all hot applications are positively mischievous, as our effort should be to encourage mummification and to prevent septic infection. Pain must be met by opium and locally by a powder of boric acid, bismuth and morphia.

The cases in which nature is sufficient to produce a cure are those where the gangrene is limited and with slight constitutional disturbances. When the gangrene is advancing amputation must be done, but not in the vicinity of the gangrene. Amputation must be done at lower third of leg, or, in exceptional cases, through the knee joint, the state of the arteries deciding this question. Where the general condition is very bad amputation is not to be thought of. The presence of albumin or sugar adds enormously to the risks.

Bacteriological Examination of Two Cases of Chorea with Rheumatism. — Apert, in the *Comptes Rendus de la Societé de Biologie* for February 4th, reports the result of the bacteriological examination of the blood in two cases of chorea with valve lesions. In one case a severe attack in a girl of twenty, there grew in anærobic culture on milk an oval diplococcus, staining by Gram and corresponding to that described by Triboulet in rheumatism. The second case was that of a boy at the end of his chorea attack and here the culture was negative. G. B.

Bacteriology of Acute Articular Rheumatism. — Triboulet and Coyon, *Comptes Rendus de la Societé de Biologie, February 4th, 1898,* give the results of their bacteriologic examinations in 11 cases of acute articular rheumatism. They discovered in all these cases a diplococcus or diplobacillus which they state cannot be well described as to its cultural peculiarities as its growth is so irregular.

The organism exhibits great pleiomorphism and resembles most closely in character the diplococcus pneumoniæ, but differs from it in that it can be kept alive for a considerable length of time, and that it is not pathogenic for mice. The organism is extremely pathogenic for rabbits, and the authors give a detailed account of its effects on a rabbit. The animal died 20 days after intravenous inoculation. Death was due to heart failure resulting from an absolute mitral insufficiency. During life there was an oscillatory temperature. The autopsy showed fresh pleuritis and pericarditis, and an acute vegetative endocarditis with tremendous masses of vegetations on the mitral valve. The vegetations microscopically showed many diplobacilli similar to those originally inoculated, and cultures from the organs also showed it. Other rabbits inoculated with smaller doses from other cases showed irregular fever, disturbances of the heart and pleurisy, but did not die. G. B.

Syphilis Caused by Lunar Caustic. — Burwinkle, in *Deutsche Med. Wochenschr., February 10, 1898.* Case, a peasant 24 years of age. The entire tip of the nose, alæ nasi and cartilaginous septum were absent. The cervical glands were much enlarged. Iodide of potash with mercurial inunctions was prescribed. The patient had been entirely well up to his twelfth year. He was then troubled with difficulty in breathing, due to a polypus which obstructed the right nostril. A physician was consulted, who applied lunar caustic to the polypus a number of times. Since that time the ulceration of the nose started.

The lunar caustic undoubtedly caused the disease, because there had never been cases of tuberculosis or syphilis in the patient's family.

The author reports one of Fournier's cases, in which there were two typical syphilitic ulcers in the middle of the patient's forearm, which had undoubtedly been due to cauterization there a few weeks before.

In conclusion the author asks the question, " How long may syphilitic poison remain virulent on instruments? " He quotes Bernier, who claimed that this was only possible for a short time, as in the antiseptic period few cases of direct infection from surgical instruments had been reported, and in the cases that had been reported the infection had taken place where one case after another had been treated with the same instruments. In the case reported by the author the nose got well, that is, a cicatrix resulted, after the anti-syphilitic treatment had been used some time. C. F. T.

The Bacterial Complications of Diabetes Mellitus. — Dr. Ivan Honl discusses this question at length in the *Wiener klinische Rundschau, 1898, Nos. 16, 17 and 19.* The author introduces his thesis with a consideration of the relative importance of predisposition to bacterial diseases, and believes that local and general conditions, age, race, sex and family have more to do with their occurrence than has lately been admitted The tendency offered by diabetes to bacterial complications is an especially prominent feature of the disease. In the first place sugar offers a favorable field for the development of some bacteria; secondly sugar lowers the resistance of the tissues, thus indirectly promoting bacterial growth; and finally, the diabetic cachexia, just as other diseases, produces a tendency to the occurrence of complications.

Furuncles and carbuncles generally reveal the staphylococcus aureus, and are due to infection through excoriations of the skin and the weakened resistance of the connective tissue. The same explanation suffices for the more severe phlegmonous conditions. Pulmonary gangrene has its origin in the usual bacteria and may be a secondary infection or combined with tuberculous conditions. Pulmonary inflammations exist commonly in connection with diabetes as a consequence of changes in the gums and in dental caries. The most frequent diabetic affection is tuberculosis, and especially pulmonary tuberculosis. The explanation of this has been found in the laboratory to be in the fact that the bacillus of tuberculosis develops more luxuriously in a medium rich in carbohydrates than in one free from sugar, and further because in diabetic conditions the bio-chemical peculiarities of the cells are changed. The writer's observations have shown that the pulmonary tuberculosis occurring in diabetes differs from the usual pulmonary phthisis. In his cases there was not the usual fibroid change and other conditions accompanying it, but a fairly large abscess-like cavity in the upper lobes, which contained necrotic masses rich in pus; the pyogenic membrane was wanting and in the neighborhood there were no inflammatory nodules. In the microscopic examination was revealed an abundance of staphylococci, but few streptococci and tubercle bacilli. In another case were plenty of Friedländer's pneumobacilli, and in both of these cases the tubercle bacilli were scanty and degenerated. The author discusses pneumomalacia at some length, which he observed in two cases. This is similar to gangrene but failed in the offensive odor, as has been explained by Orth. Fibrinous pneumonia, purulent infection of the lungs and septico-pyæmic conditions are also included in the author's description of the bacterial complications of diabetes, as are otitis purulenta, typhoid fever, mycotic conditions, certain urinary changes, eczema and gangrene.

He states the following conclusions:

1. The most frequent complication of diabetes is tuberculosis.

2. The diabetic tuberculosis appears in different forms, in which it is noticeable that rapid destruction of the pulmonary tissue takes place, and which depends upon a scant number of specific bacilli.

3. From the tubercular cavities internal processes may originate, septic or pyæmic, which may call forth microbes of infrequent appearance in human pathology.

4. Croupous pneumonia, which occurs in diabetes, is probably not in all cases due to the pneumococcus.

5. The author has observed a case of pneumobacillary septicopyæmia (the fourth in the literature).

6. The immunity of certain animals against many infections may be removed. Phloridizin-diabetes, experimentally induced, removes the immunity of rabbits against the pneumo-bacillus.

The Diagnostic Value of Tuberculin. — Martin and Robins, in the *British Medical Journal, February 5th, 1898,* discuss this subject. It was employed, when first introduced six years ago, with considerable success, but fell into disrepute because it was feared that the injections would rekindle quiescent foci, and also because the results were often contradictory. The first objection was probably due to the large dosage then employed, as injections of 5 mg. or less have not induced any evil results. Cases of undoubted tuberculosis have failed to react, while those in whom there was no demonstrable evidence have afforded pronounced reactions. This may be due to one of three conditions: first, early cases of pure tuberculosis may fail to react through insufficient dosage; secondly, where marked mixed infection is present the reaction may be much less pronounced or absent, and, thirdly, cases of advanced phthisis may be incapable of reaction on account of their impoverished tissues. It is impossible from physical examination to say there is no tuberculous lesion present. The experience of veterinarians and the results of autopsies prove how imperfect oftentimes physical examinations are. The results obtained by Senator, Fingler, Guttman and others are highly confirmatory, while the contradictory results of Mosler are difficult to explain, except on the personal element of technique or method.

The writers give an initial injection of ½ to 1 mg. according as the patient was a child or an adult; with no reaction, a second dosage of 2 mg. after two or three days; and if no reaction followed, a final dose of 3 mg. after the same period. If the result continued negative no tuberculosis was present, though in one case this was absolutely false.

As to the results of the injections, in not a single instance did local or general trouble arise. Thirty patients, in whom no tuberculosis could be discerned, failed to respond, while 21 cases of undoubted tuberculosis reacted positively. Several failures are to be recorded, but these occurred under small doses and before the writers were aware that larger doses are sometimes necessary. The reaction consisted of a rise of temperature of more than 1½° to 2° which subsided in about 36 to 48 hours. The general symptoms were slight — headache, slight malaise with nausea. Distinct rigors were uncommon.

Supra-renal Extract, a Cardiac Stimulant. — Monkovsky (*Centralblatt für innere Medicin, Feb. 12, 1898*), as a result of his previous experiments that the supra-renal extract stimulated the heart, injected a one per cent. solution into the jugular veins of dogs apparently dead from chloroform narcosis. In most cases the animals were completely revived when the injection was made thirty seconds after apparent death. In control-experiments he found that nothing gave such marked results as the supra-renal capsule extract. In special cases, where the cardiac strength returned spontaneously, the animals finally died from general weakness. Large doses of the extract were poisonous. The author advises the intravenous injection of supra-renal capsule extract in all cases of apparent death from chloroform narcosis.

Practical Therapeutics.

Treatment of Acute Urethritis with Protargol.— Barlow, of Munich (*Therapeut. Monatschrift, March, 1898*), has successfully treated a large number of cases of acute gonorrhœa with protargol in gradually increasing solutions of ¼, ½, 1%. The gonococci disappear quickly, but the injections should not be discontinued too early. He believes that with this treatment the inflammation is more often confined to the anterior part than by other methods of treatment. In regard to Janet's method, by large injections, he has never seen acute urethritis really aborted. For the acute urethritis posterior he recommends irrigations of protargol 1:2000 to 1:1000. Benario, of Frankfurt, has also had excellent results. With injections of 1.5% solution the discharge was reduced to the smallest quantity within eight days and the gonococci disappeared in 10 to 14 days. In vaginal and cervical gonorrhœa tampons with 10% glycerine solution were employed and intra-uterine irrigations with a 1% solution. In ophthalmic blenorrhœa a six per cent. solution was employed. In the treatment of septic wounds also a five per cent. solution of protargol was of value.

Errhines as Expectorants.— Sir Dyce Duckworth, in the March *Practitioner* calls attention to the fact that sneezing is often of great value in suffocative bronchitis in clearing the bronchial tubes. He therefore advocates that errhines be used in some cases as expectorants with the ordinary pneumo-musculo-excitants like carbonate of ammonia.

He suggests for this purpose ordinary snuff, or a powder composed of one part of veratria and twenty parts of starch, lycopodium or liquorice powder. G. B.

Supra-renal Gland in Addison's Disease. — Béclère (*Sem. Med., March 2, 1898*) gives the history of a patient with Addison's disease successfully treated with supra-renal gland. A man aged 28, with slight tuberculous lesions at the apex of one lung and all the characteristic symptoms of Addison's disease. Fifteen to twenty grains of fresh supra-renal capsule were administered daily, together with subcutaneous injections of a glycerinated extract of supra-renal capsule. The treatment lasted five months without any inconvenience, but no improvement was noted. But some time after its discontinuance he began to regain his strength and the pigmentation began to disappear. In a short time the improvement was such that he was able to return to work and it was maintained for three years after the treatment. The author appreciates that this disease sometimes presents remissions of longer or shorter duration independent of treatment, but believes that the supra-renal treatment had something to do with the result. This substance does not supply something that is wanting as does the thyroid extract, but favors a compensatory hypertrophy of the portions of the supra-renal body remaining healthy. In the discussion Hayem stated that he had treated a case with supra-renal substance. There was notable improvement, especially in strength, but no effect upon the pigmentation. Vidal had a similar experience, though the patient in a short time relapsed and quickly died.

Bismuth in Gastric Ulcer. — Dreschfeld, in the *British Medical Journal, March 12th, 1898,* pointed out the inconveniences and dangers of the stomach tube in cases of gastric ulcer and obtained excellent results by giving large doses of bismuth by the mouth. Thirty to fifty grains of bismuth suspended in water were given three times a day. The pain was rapidly relieved, vomiting ceased, digestion improved, allowing light nitrogenous foods, and the ulcer quickly healed. In acid dyspepsia it rapidly relieved the symptoms. In neurasthenic conditions with symptoms resembling ulcer it had also been of great service. Two cases not relieved by this method of treatment were cured by injecting the bismuth into the stomach after lavage.

Amylolytic Ferments. — Wyatt Wingraves reports in *The Lancet, May 7, 1898,* the results of an examination of several starch ferments, test-tube experiments being made, first, under favorable conditions, and secondly, under conditions analogous with those of dyspepsia. For the latter tests, lactic and butyric acids were added to the starches in sufficient quantity to produce the well-known acid taste. Clinical observations supported the test-tube evidence. The conclusions were summarized as follows:

1. Of the commercial starch or diastatic ferments taka-diastase is apparently the most powerful and the most reliable since it is more rapid in its action — *i. e.,* it will convert a larger amount in a given time than will any other amylolytic ferment.

2. Organic acids, such as butyric, acetic, and lactic, the acids most frequently present in pyrosis, etc., do retard, but do not permanently kill the ferments, and when neutralized are harmless. Taka-diastase seems to be less influenced by them, and also by tea, coffee, and alcohol, than are saliva and malt extracts.

3. Hydrochloric and other mineral acids quickly stop and permanently destroy all the starch ferments if allowed sufficient time and if present in sufficient quantities.

4. Taka-diastase and malt diastase have, like ptyalin, no action upon cellulose (uncooked starch).

Treatment of Delirium Tremens with Atropine. — Tourrine, of St. Petersburg, treated eleven cases of delirum tremens with atropine. In ten cases, after a subcutaneous injection of atropine, grain $\frac{1}{60}$, the patients fell into a quiet and deep sleep.

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MEDICAL AND OTHER EXPERTS.*

BY ST.CLAIR McKELWAY, LL. D.,

Regent of the University of the State of New York.

My Friends: The expert is a topic of the time. He has also been a problem for a long period, and he is almost becoming a scandal. Whether he is the best abused or least understood man of his generation cannot be settled. The profession, whatever it may be to which he belongs — the bench, the bar, the press — science associations and the general public find in him a subject that alike impels and repels consideration.

The character in which he concerns mankind is that of a witness. As a witness, he differs from all others who give testimony in the fact that, while those others give or claim to give evidence of what they know, he is called on to render under oath his opinions. He is, in short, an opinion witness. The degree to which his opinions are correct should really entitle him to be called an expert. But the term is broad, general and sweeping, and for purposes of practical estimate the expert must be regarded as any specialist giving evidence in the form of opinion, no matter what his real or reputed standing in his specialty or in the community.

As already said, the other witnesses known to the law are barred from opinion giving. Facts, they are assured, are what court and jury wish to hear from them, and not opinions. The effort to confine general witnesses to facts is not always successful. Juries, however, are told and instructed to disregard the opinions of all but expert witnesses, taking even those opinions as but a fact in the case, and they sincerely try to do so. It has come to pass that juries without instruction, but under a conscientious view of their duty to justice and to their oaths, are more and more disregarding expert evidence except as that evidence may receive the stamp of favor from the words of the judge himself.

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* Read at the meeting of the American Social Science A sociation, Saratoga, N. Y., September 1, 1898.

Reasons for the cheapening of expert evidence are not far to seek or hard to find. It is cheapened for exactly the same cause that leads jurors to discount the speeches of advocates. The advocates are hired to say their say. The experts are paid to testify to their opinions. On the whole, the advocates come off better in jurors' judgments than the experts. The legal profession, from the beginning, has been justified in its own opinion and in the opinion of practical reasoners in taking sides in any case. There are always two sides, and sometimes as many interests are involved and represented as to suggest a much larger number of sides. Each one of these is entitled to its lawyer or lawyers, and they, in common acceptation, are entitled to payment. The payment itself, by common acceptation, can be proportioned to the eminence of the advocate, or to the ability of the represented interest to compensate him, or to the value of the issues involved, or to the amount of labor required, or to the degree of opposition to overcome, or to all these considerations combined or to any group of them. The lawyer as a money maker does no violence to any received conception of his function. This is especially so when the fact is borne in mind that in many criminal cases lawyers, under the assignment of courts to defend clients who cannot afford to retain counsel, will do for them without charge or for only a nominal consideration all that they would do or could do for the richest defendant. The chivalry of the bar in these instances commends their charges at high figures in other instances.

So it must not be thought that lawyers' addresses are discounted and compared and criticised and contrasted by jurors merely because attorneys are hired advocates. Jurors do not condemn them for being hired, but they do rate what they say below the value or emphasis which lawyers would have them put upon it, because they think that the study, in the main, of one side only, and the desire, altogether, to have that side successful, give to the advocate a partisan, an interested, a biased and a warped view of the subject which he treats. The discount of lawyers' addresses is due to this estimate of their interested relationship. The discount of the charge of the judge is a thought which does not enter jurors' minds. The judge is elected, sworn and paid to be impartial. He is thought to be so. In nine instances out of ten, he is so. In the tenth his deviation from impartiality would hardly be discerned except by the most critical, and by them it would be regarded as an error not of intention.

Now apply this operation of morals and of reasoning to experts. They are privileged witnesses. They alone are privileged to give opinions on the facts or on the supposed facts. The judge himself is not allowed to do that. He is careful to tell the jury that they are solely the judges of the facts and of all the facts in the case, but among those very facts is the fact of the opinion evidence of experts, is the other fact of the conflicting opinion evidence of such experts, and is the third fact that these experts are paid to give the opinion which they do render under oath, and are paid to impair or to destroy the contrary opinion which antagonistic experts are likewise paid to render and to defend under oath.

COURTS ON PAID OPINION WITNESSES.

If we drop our casuistry as lawyers, or if we lift ourselves above the technical procedure of courts, if we retire for a moment the artificial reasons by which such casuistry and technicality can both be defended, we can get down to some plain ethical considerations. One of them is that such opinions as many experts are called on to render should be invaluable and, therefore, the property of all and not for sale to any interest or man to use against others. A profession should be a title of nobility. *Noblesse oblige* should be the motto of contemporary civilization as much as it ever was of that of any time. If the professions other than that of law which, as already said, is a licensed and discounted partisan, and the contending partisanship of which is tempered by judge and jury and is really useful to both, deliberately enter the market in competition for clients or for a price, they must expect to part with the authority and respect which they would like to command, and they must expect to be rated by the gauge and wage of interest in hand or in sight, supplied by the adherents to the view to which they sell their services. There can be no retreat from this proposition. Men may protest against it, but it will not down at their protest. Experts may feel offended by it, but the offenders are those by whom the offense cometh. Their friends and their families may object to it, but the laws of human nature are not changed for their comfort or to preserve or to increase their importance. It is a fact in the world. The retained expert is becoming more and more a discredited quantity in the courts of law, among jurors in the press and in the general community.

It was only a while ago, in the case of Roberts v. The New York Elevated Railroad Company (128th New York, page 465), that Mr. Justice Peckham, then of the Court of Appeals, and now of the United States Supreme Court, said:

> "Expert evidence, so called, or, in other words, evidence of the mere opinion of witnesses, has been used to such an extent that the evidence given by them has come to be looked upon with great suspicion, both by courts and jurors, and the fact has become very plain, in any case where opinion evidence is admissible, that the particular kind of an opinion desired by any party to the investigation can be readily procured by paying the price therefor. We have lately said that the rules admitting the opinion of experts should not be unnecessarily extended, because experience has shown that it is much safer to confine the testimony of witnesses to facts in all cases where that is practicable, and leave the jury to exercise their judgment and experience on the facts proved."

And the same court, by Judge Earl, in Ferguson v. Hubbell (97th New York, page 507), declared:

> "It is generally safer to take the judgment of unskilled jurors than the opinions of hired and generally biased experts."

This is judicial language. Like too much judicial language, it is turgid and involved, for the clarity of journalism or the elegance of literature rarely characterizes judicial opinions. Admission must be made, however, that the language of such opinions is generally strong, though blunt, and can sometimes be understood even when it cannot be parsed. Aside from that, however, the language is at once a final estimate and a final instruction by the court of highest authority and last decision in this State, a court which has always commanded the respect of the State, and a State which has always commanded, through that court, the respect of the Republic and of the world. The language is the characterization of a system. It virtually calls that system a vice. Indirectly it argues and almost demands the abolition of that system. The court has not the power to abolish it, but the court has done all the court could to degrade it.

There may be another side. Something can possibly be said for that other side. I would certainly say all I could within truth and duty in extenuation, not of the system, for that is morally indefensible, but for the practitioners of it. Many of them, by far the most of them, are honorable men. They mean to tell the truth and to tell it with justice and impartiality. But no man should be placed in a position in which he cannot do that, much as he may want to do it. In such a position professional experts are placed by the existing state of things. No one would expect an attorney to leave his place by the table from which he speaks and to mount to the chair of the judge, thence to deliver a judicially impartial and absolutely unbiased opinion upon his own partisan argument as a retained counsel. The effect of one-sided study on the mind would make that impossible. The operation of interest, of combat, the dear delight of battle, the passion for a particular result would render that beyond human power. The very effort would be a travesty on the function both of judge and counsel. Such an illustration should suffice for the unnatural attitude of the professional expert toward the impartial justice of which he should be the exponent. Until the expert can obtain the warrant which the bar has obtained of a licensed partisan, his vocation will carry a sense of scandal in it, and when he has obtained that warrant, then his professional standing will be impaired, and the dignity and authority of his personal equation will be reduced.

Of course, you and I and all of us know that there are experts and experts; that there are exact sciences and inexact sciences; that there are opinion witnesses who can be positive and others who must be tentative; that there are absolute truths and empirical propositions and pursuits. Of course, we all know that under the present system the expert confronts a fellow-expert, and that both are harassed, angered and confused by cross-examinations conducted with the purpose of breaking them down, of destroying their influence with the jury and indirectly of bringing them, through the accomplishment of their overthrow, into contradictions that make havoc of their credit, ducks and drakes of their fame, reduction of their income and ruin of their confidence and self-respect. These are all true statements. You and I have heard them. You and I have made them. You and I have regretted them. Bar associations and medical associations and social science gatherings have been the theatre of the utterance of them, and so they are as trite as true, and need not amplification here. But let us not undervalue these palliative pleas, even when we do not renew them.

Still, these considerations do not touch the heart of the subject. You all realize that. These considerations were not absent from the mind of the judges of the Court of Appeals when they delivered the terrific objurgations which have been quoted. That tribunal would have had, as we would have, charity for all the victims of a wrongful system without abating opposition to the system itself or the purpose to abolish or to reform it. It must be abolished or it must be reformed. I have been told that neither its abolition nor its reform is possible. I have been told that the right to call an opinion witness is the same as the right to call any other witness. The assertion is made that the right to call an opinion witness involves the right to call any number of such witnesses, and that the right to contradict, to cross-examine and to break down or to discredit such witnesses is the same as the right to do that in the case of any other witnesses. The declaration has been advanced that the freedom of trials is essential to their fairness, and that that freedom would be dangerously abridged if opinion witnesses were placed upon any other basis than that of other witnesses, so far as their treatment or credence is concerned, except as they themselves, by character, learning and dignity, can make for themselves a special consideration, and can protect themselves against the concerted impertinences of bombarding counsel.

DEFENSES OF EXPERTS BY SOME LAWYERS.

This plea is put forward mainly by lawyers who have brought expert testimony into disrepute, and who, to a degree, have brought their own profession into disrepute by the arts which they have practiced for the concealment or destruction of truth rather than for its disclosure and denotement. It is the plea of lawyers who, in many instances, have exceeded even the elastic limits of the easy ethics of their profession. The plea is made by lawyers who could well be called barrators, and the agents of champerty instead of the officers of justice; by lawyers who take cases, not for the truth that is in them, but for the lies which can be put into them, and who stipulate, in the event of the success of their efforts, that to them shall come the major part of the guilty gains. Such lawyers are as much of a reproach to the bar as any other scoundrels are to any other profession which they disgrace. The bar is potentially equipped with the means of driving these pests from the calling which they contaminate. But the bar has been wofully negligent in availing itself of such means. The source of the plea should suffice to dispose of it, for the object of these men is the denial and the defeat, not the triumph, of justice. It is the enrichment of themselves out of the robbery of others by the forms and processes of litigation. Even the plea might be admitted, in its comparative sense, without touching the heart of the subject. It might be conceded that opinion witnesses should receive no better treatment than other witnesses. I do not know that opinion witnesses ask for any better treatment than other witnesses should receive. But I do submit that if the treatment which opinion witnesses do receive is but the treatment that other witnesses receive, then the argument for the better and juster and fairer and more considerate treatment of all witnesses is made unanswerable. I am happy to concede that, opinion witnesses apart, the general treatment of other witnesses is better than it formerly and long was. Jurors have shown a resentment at the injustice or brutality practiced against witnesses of their own class and calling in life. Even the bullies of the bar have taken the hint, and judges have been strengthened in their desire to enforce good manners upon them.

I have said that this plea for expert testimony as it is, is not put forth by experts themselves. Their plea has been something like this: They are learned men. The use of their knowledge secures them their living and their income. The time and labor which they must put forth in advance of trials to equip themselves for their duty as witnesses, and the time and labor which they must put forth in trials as witnesses are taken from the paid practice of their profession, unless their preparation to be witnesses and the act of being witnesses be also called the exercise of their profession. If it is such practice of their profession, they are entitled to be paid for so practicing their profession. If they are entitled to be paid in their capacity as witnesses for the practice of their profession, their pay can be rightly based upon their own estimate of the value of their services to the interests retaining them, and that devolves upon them the duty of sustaining their view of the case by every means which they can rightfully use.

I think this is a faithful summary of the best defenses which I have read by any of the experts themselves. Every witness has his work to do in the world. The expert is the only witness who claims or is allowed special payment for the suspension of his work outside long enough to become a witness in court. His plea is that his work there is really the continuation of his work outside, and that his preparation for that work is much more difficult than the mere duty laid upon other witnesses to testify concerning general facts. There is some truth in this plea. The expert perhaps should be paid a reasonable sum for his special knowledge and special labor. But that knowledge and that labor, as they belong to justice, should be paid by justice and not by one side or by the other contending for the consideration of justice. The attorneyship theory of a witness is virtually an infraction of his oath to tell the truth, the whole truth and nothing but the truth, for he feels retained, when retained, to take that view of the subject that will tell for the side retaining him. A large sum of money to a general witness would be called a bribe. A large sum of money to an expert witness is a stimulation or a persuader. There is a difference between that and the bribe to the general witness. It is a shadowy difference hard to define or describe. There is a resemblance between them. It is a resemblance too plain or too repulsive to be pointed out.

Not the right of expert witnesses to reimbursement is questioned, but the source of that reimbursement. He who has power over my subsistence has power over my will. This Baconian statement is especially true when subsistence plays the important part which it sustains in an era of multiplied wants and of competitive living; when what men have or can command is the measure of their necessities, their luxuries and, in a sense, of their importance. Such indirect power, at least, over the subsistence of expert witnesses retaining clients or interests have. The degree to which that constrains their will cannot be nicely determined, but a real and palpable constraint can be asserted with truth. Hence, as said, the source of their remuneration is all important. I sympathize with those who contend that the source of it should be the public treasury; that the measurer of the value of the time, labor, knowledge and reputation of the expert witness should be the judge, himself a professional man, lifted by station, public support and official authority above unfair criticism, and sure to be upheld in any large and liberal estimate which he may make in the name of justice.

I sympathize, also, with those experts who both philosophically and pathetically maintain that the partisanship of their employment should cease; that they should be summoned by the court alone and not by the attorney of either side under color of the court's authority; that as many experts should be judicially summoned as the judge thinks the rights of all interests in the case will require; that, if necessary, a list of experts should be nominated to the judge by each side of the case, from which list the judge should select those whom he thinks could best be chosen; that the propositions submitted to these experts and the replies obtained from them should be in writing, and that, so far as written interrogatory and written cross-interrogatory will permit, the investigation of the questions upon which the views of opinion witnesses are required should be conducted by commission, not in open court. The judge himself should be the final authority of the net truth to be gathered from all the expert testimony thus obtained, and should announce that truth *ex cathedra*, as it were, to the jury with the same precision, authority and impartiality with which to them he expounds the law.

This would be a reduction of the present scandal of expert testimony. It should be the first step toward the reform or the abatement of that scandal. If the change can be made by statute it should be made in that way. If constitutional action is required, that action should be had. If, however, as many believe, courts under their broad equity powers can decree or ordain this change, that should be done. Court-made law is in the long run the best law. The influence of courts on the making of law by legislative action has for a long time been benign as well as in the very nature of things large. The object of trials is the finding out of facts or truth. That method of trial which best finds out the truth of any case is the best, but, neither of judicial methods nor of any methods, as Prof. Isaac Franklin Russell well says, can absolute demonstration be affirmed. Of mathematics and of physics alone can that be affirmed. Law must take its chances on human infirmities, human interest and human sins. But we know that we owe largely to courts that sympathetic correspondence with humanity which has simplified the getting of evidence, on the one hand, and reduced the brutality of penalty, on the other. Thanks to this, the duel is no longer a decision. Ordeal of fire is obsolete. Ordeal of water has ceased. The challenge to Heaven for intervention in matters demitted to man is no longer allowed.

The reforms in testimony which have been secured assure that reforms still needed can be secured. Plaintiffs, defendants and other parties in interest can now testify in a case — the jury to weigh the fact of their interest as it should be. Wives and husbands in most cases can now freely testify for or against one another. Even convicted parties can give their evidence. These and many other advances argue that the reforms needed in the matter of expert evidence can be secured. They must be secured, if the expert is to remain a witness at all, or other than a discredited one. His present status can be tolerable to no profession to which he belongs, to justice or to himself.

CURIOSITIES OF EXPERT TESTIMONY.

My purpose has been constant in this output of my views to avoid the personal treatment of the question, or at least to work into it no reflection on experts as individuals. It is difficult, however, to avoid consideration of the bad effect upon experts of the partisan or competitive character of their testimony. There are men who hold themselves out as experts. There are so-called experts who seek to commend themselves to the injured as their professional backers in vindictive litigation. Others still constantly seek to ingratiate themselves with corporations which are exposed to damage suits. There are runners in about every city on the lookout for accidents, who carry in one pocket the cards of damage lawyers and in another the addresses of professional experts with a notoriety or celebrity for the aggravation of injuries. Neither the collective character of the bar nor the collective character of the medical profession is represented by these creatures. But these creatures do exist, are active and, to say the least, are rarely poor.

I have known more than one aspirant for judicial honors to base his endeavors upon the wealth which he has acquired in what I do not hesitate to call the infamous practice of the legal profession, and, to make his plea for nomination extremely pathetic, such an aspirant generally says that if he is raised to the bench, he will have an opportunity by reform or by restraint to improve his reputation. I have known doctors who have testified on one side of the river upon a state of facts, involving the plea of insanity, to exactly the opposite effect to that which they have given evidence upon identically the same state of facts on the other side of that river. When confronted with their contradictions, they have said that the facts were not exactly the same, although everybody knew that they were.

I know of one expert, so-called, eminent at the time, but happily discredited since, who agreed to testify to the sanity of a defendant indicted for homicide, whose mental condition he had thoroughly studied. The district attorney had only one thousand dollars from the Board of Supervisors with which to pay this man. A relative of the defendant paid to this doctor $1,500, and when the trial came on he testified to the mental irresponsibility of the defendant, who was acquitted. He was confronted with a letter of his own to the district attorney, in which he had taken the ground that the defendant was entirely sane. He unhesitatingly explained his sworn testimony by declaring that he had given to the subject a more careful examination than he had been able to give when he wrote the letter. The $500 difference between what the State could pay to him and what he was paid by the defense was set forth to the jury without apparently weakening his credit with that tribunal.

Another case within my observation involved the release of a United States prisoner by the President on the assurance of a medical expert that the man was at the point of death. After his release the man lived fifteen years in good health, and died of injuries received on a railroad. Those fifteen years, however, cost him $1,000 apiece, for the sum of them is what the expert charged him

Near to Saratoga the Delaware and Hudson Canal Company Railroad was resisting a suit for damages by a man claiming to have been badly injured on its cars. The defense was contributory negligence, and that the injuries were nominal and not real. An expert for revenue only went on the stand and swore the plaintiff nearly into his grave. The company's counsel, on cross-examination, confronted the expert with a letter written by himself four months before the beginning of the trial. It was written by the expert to the plaintiff's home physician. It declared that the plaintiff had been under his charge with a few bruises that had been easily healed, and that he was substantially cured. It recited the treatment pursued and advised its continuance, if the patient did not regard himself as wholly restored. A postscript to this letter was marked confidential. In it the writer, that is, the expert, said he understood the patient proposed bringing a suit against the railroad company for high damages, and the writer added his belief that the case could be sworn through to the satisfaction of any jury by a doctor who kept his mind in good working order. I cannot explain why this expert was so foolish as to write so compromising a letter. The presumption at the trial was that he regarded the practitioner to whom the letter was written to be as unconscionable as himself. I am happy to say that the jury found for the corporation.

These are not typical instances. They are exceptional, but they ought to be impossible. Far from being impossible, they are likely to cease to be exceptional under the stimulus of speculative lawsuits and competitive exploiting of professional views.

But I am not sure that reforms in expert testimony alone will bring about all the improvement which men have a right to demand of tribunals, called tribunals of justice and which should be tribunals of justice in fact as well as in name. Many of the abuses charged up to expert testimony could be charged up to other testimony. The expert is not the only sinner in the world of witnesses. Law itself may unwittingly be violating the principles on which its institution in the world can be justified. I do not refer to civil litigations. They are luxuries which principally prosper or injure those who engage in them. A large percentage of them is chargeable to corporations which are artificial persons, and in them the issue or the interest is distinctly financial rather than what we may call general or human. I do not forget that human rights have been advanced and government encroachments arrested by many of these cases in which municipalities, companies or other chartered creatures have been involved. But, in the main, they are not largely affected by public or human interests

COURTS, THE COMMUNITY AND CRIME.

The relation in which law stands to the community is its relation to crime. The science of criminology is the one which legal reformers, social reformers, humanitarians and scientists should take into account. Certainly statistics do not show that right is gaining over wrong that proportion of advantage which existing judicial systems or methods ought to be able to show. In 1850 only one person in every 3,442 of our population in America was a prisoner. In 1890 one in every 757 persons was a prisoner. The annual cost of the administration of criminal law in the United States is over $60,000,000. That is more than thirty times as large as the cost of our entire diplomatic service. It is more than twenty-five times as large as the annual remuneration of our Federal legislators. Except in war times, it exceeds the cost of our naval and army establishments combined. It represents the largest single item of expense in our system except the interest on the debt or the pension roll.

These figures stand for the theory of punishment as punitive rather than as remedial, as vindictive rather than as reformatory. For one, I am not sorry at the enormity of the figures or at the enormous ratio of their increase. The fact of itself assures a change in the spirit if not in the methods of jurisprudence. Let us look at a few more statistics for which I am indebted to a recent publication by Dr. Austin Flint and to Gen. Newton

Martin Curtis. In 1882 the number of murders in the United States was 1,467. In 1891 the number was 5,906. The proportion of other criminal offenses than capital ones shows nearly the same startling increase. This brings us to the question which really underlies the whole matter of medical experts that I have been discussing. Until the probe goes to the bottom the evil will not be explored and the remedy will not be found.

The criminal is a sinner, but he is also a sufferer. He is an offender. But he is also a morally ill man. He is an evil-doer, but he is also a patient. And so should he be regarded. As Dr. Flint contends that punishment should be administered which is treatment, and treatment should carry in it the element of prescription as well as of penalty. The curability of much, indeed, of most crime as well as of many other diseases should be kept in view. Protection of the community from incurable crime as from other incurable disease should also be borne in mind. The propagation of habitual criminals is the certain perpetuation not only of the criminal class but of the great body of offenses for which they can be punished, but which their punishment does not reduce in the world.

Of medical experts, the function should be less the extenuation of crime, by the estimate or demonstration of the defendant's insanity or irresponsibility, than the protection of the community from him by his sequestration or than the restoration of him to responsibility, to accountability and to will power by right treatment. The expert's function should be the function of the physician whether in court or out of court. He should study crime scientifically as that same foe to the general welfare that any other moral or physical malady is. On this very question of expert evidence, Dr. Flint, himself an authority, says: "Under existing methods, scientific experts, far from giving aid, add confusion to criminal jurisprudence by conflicting testimony. And who shall decide which expert advocate is right?" His contention is that the value of expert testimony can be estimated not at all, if to two contradictory opinions equal value be given. I shall not, for, without too much quotation, I could not, and even then, I fear not intelligently, follow him in his demand that crime be treated from the standpoint of disease; that the indeterminate sentence and the reformatory object of all sentences be kept in mind. His propositions have been advocated before in papers here I give to those propositions, to his opportune statement of them and to Mr. Brockway's invaluable practical demonstration of their soundness the small homage of my sincere indorsement and earnest admiration. I can only, as a layman, generalize where these real experts specialize.

And so, unscientifically but ardently and even passionately, if you will, I wish to give my adhesion to the scientific rather than to the theological estimate and treatment of the problem of sin in the world. Sin is want of conformity unto law. But acts are not wrong merely because they are forbidden. They are forbidden because they are wrong. The law from which sin is a deviation or of which it is a violation should be discovered by the study of nature as well as of Scripture, and by the light of science as well as by that of revelation. Men may talk and write and fulminate or refine all they please about original sin, or imputed guilt, or primordial innocence or the fall. For imputation I read heredity. For guilt I read disease. For punishment I read treatment. Theology and science alike agree in regarding man as the victim of violated law. The thing involved, law, and the creature involved, man, are the same. Disputes around these two points of agreement are important only to those who feel themselves put in trust of dogmas or doctrines. They are not significant to those who would walk on the sure and eternal foundations. Yet it would seem at times as if man is the only part of creation man does not understand. He dominates all animals and domesticates many. He fells or creates forests. As a cultivator he stimulates nature to more beautiful and useful results than nature, unaided, could do. He is the only criminal in the world, because he is the only being in the world who has consciousness of evil doing, who has the perception of better doing, and who has the aspiration and capability of advance. He makes nature his servant in his capacity as the consummate product or the head of creation. Yet he punishes himself by his own laws with less justice and discrimination than he does many of the animals whom he dominates.

Crime should be treated by courts, and crimes should be diagnosed by medical experts in a way, if possible, to restore man to the original purity and innocence predicated of him by theology, or to advance him to such a condition according to whether the not essentially conflicting terms of theology or science be used. The shibboleth of the first runs thought backward to an earlier estate. The word of the second would front the mind toward a better future. The law which each would subserve is not that body of statutes passed by legislatures. It is not that body of usages called common law, which is the upcome of experience in the race. It is a code of conformity with the original nature of man claimed by theology or with the possibilities of development before man revealed by science. Either can, not irreverently, be called the establishment of God. The old view has given to us crosses. The new view is filled with schools. The old view has been punctuated by the stake. The new view has been illuminated by industry. Our feet stumble over chopping-blocks or are entangled in bowstrings, or hit against the supports of gallows, or encounter the clamps of the electric chair in the blinded ways of the past. By the torch which History puts in our hands on that dreary road are seen whipping posts, dungeons, punitive prisons, penal colonies, starvation cells and the like. These have required punishments proportioned to the criminal's supposed measure of injury to others. That domain of moral darkness is sentineled by sheriffs, jailers, executioners, armies — all for the purpose of guarding men in the mass against the percentage of other men called criminals.

CRIME A CURABLE DISEASE.

Thence has been evolved the science of the law as a body of trained men impartially dividing for the protection of the community from the criminal and of the criminal from the community. Hence the intricate mechanism of courts, the serial and appellate system of procedure with the confessed gain of crime on authority out of proportion to the gain of population and in sarcastic contrast with the progress of religion and of education in the world. Something better than this must be had. The criminal must be protected from himself. Such a study of him as will account for what he is and why he is so, for what he did and why he did it, must be secured. Such a change of influences as will form in him at least a perception of better things must be effected. Encouragement to right doing and inducement to it must be supplied.

The criminal is not an instance. He is a type. He is not merely a person. He is a species. He is not merely a transgressor. He is a product. He is not merely a product. He is a reproducer of his kind worsened and intensified. His moral sanitation must be regarded as of vital importance. The community must be protected from his begetting powers until he can be made a worthy citizen and allowed to become a worthy progenitor.

This is where the medical expert should come in. The community should be his patient when the prisoner is his subject. He should prognose the case of posterity when he deals with the contemporary culprit. The prison to him should be a hospital or an asylum. All our jurisprudence should be essentially medical in its intent, scientific in its procedure and moral in its motive. This is entirely possible within existing instrumentalities.

Our courts can be made respond to these principles. The profession of law can be made compatible with the advocacy of these truths. The function of the district attorney can be made judicial and morally pathological instead of legally vindictive. With him the criminal defendant's attorney can walk hand in hand on the highway of right, instead of reproducing the brutal mimicry of savage war, which should be an impossible travesty and an incredible barbarity in temples dedicated to the justice which is mercy and to the mercy which is justice. Of all of our existing institutions of a judicial and legal character use could be made for the moral medication of so-called crime so as to make its treatment preventive where it is not, curative where it is not, uplifting where it is not, an inspiration and an inculcation of hope where now it only carries occasion for despair and a welcome even to death. In all this we should guard against maudlinism or mushiness, than which nothing is more unscientific. Neither of those forms of weakness, however, is involved when one protests against the herding of criminals together or against the wrong of keeping a man longer in prison than the time required to create in him a character-cure and a character-change. To a cured or a convalescent criminal should be no more denied his discharge than to any other cured or convalescent patient. An incurable criminal should no more be let loose upon the community than the causes, the germs or the victims of an incurable disease. The medical expert question and the question of other experts, in their relation to law and to criminology, are involved in the sincere invocation for men and for governments of the realization of the divine purpose in restoring or in reforming, in returning or in upraising all the children of the Universal Father to their highest possibilities of development in the world that now is and in the world that is to come.

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For the ANNALS.

LESIONS OF THE CENTRUM OVALE, WITH A REPORT OF A CASE OF TUMOR IN THE RIGHT CENTRUM SEMI-OVALE, WITH AUTOPSY.

REMARKS ON CLINICAL SYMPTOMS AND DIFFERENTIAL DIAGNOSIS.

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(*Concluded from September* ANNALS, p. 447.)

A careful study of the literature of reported cases of lesions of the centrum ovale proves the difficulty of accurately localizing the seat of lesion. Notwithstanding the great advances in cerebral localization, very little has been added to the conclusions drawn by Nothnagel in his *Topische Diagnostik der Gehirn Krankheiten,* published in 1879. The gist of his conclusion is that there are no focal symptoms of a positive localizing value in these lesions. As the integrity of the association, commissural or projection fibres is impaired, we may look for symptoms of their irritation or destruction. The function of the association fibres is to associate the various sensory perceptions which are received in near or distant parts of the cortex of the same hemisphere, and thus to form by this association perfect mental pictures. These large tracts of association form no inconsiderable part of the white matter of the centrum ovale, and must necessarily suffer when lesions exist in the latter. If the commissural nerves, which are chiefly those of the corpus callosum, are involved, the only condition which one would expect to find would be inability to perform bilateral movements, such as swinging Indian clubs, rowing, catching a ball, wing shooting, etc. The projection fibres of which we have any positive physiological knowledge may be divided into two forms — those which convey motor impulses and those which conduct the various forms of sensory impressions. If these fibres be destroyed certain definite symptoms would be produced, as incomplete motor or sensory paralysis, hemianopsia, disturbances or complete loss of hearing, and partial or complete aphasia, motor or sensory. A case reported by Nothnagel (page 341, *Topische Diagnostik der Gehirn Krankheiten*) proves that an almost complete but slow-going destruction of the centrum ovale may occur without any symptoms by which one could recognize the location of the lesion, other than those of a general character, such as headache, vertigo, vomiting, optic neuritis and coma. This is particularly true of lesions involving the centrum ovale of the occipital, temporal or upper frontal lobes. In lesions of the frontal lobe some of the following symptoms may occur: Slowness of cerebration, gradual loss of memory, dullness of intellect and a gradually increasing dementia. This is beautifully shown in a case reported by Wilkes in his *Lectures on Nervous Diseases*, London, 1878:

Patient (male) came to the hospital complaining of pain in the course of the occipital nerve. After a short time his demeanor became morose; he sat quietly in his chair in a lethargic state. Then he took to his bed and remained there in a passive condition. He had no paralysis, and complained of no symptom at any time apart from headache. But from the beginning his symptoms were those of a gradually increasing dementia. The autopsy showed a tumor, the size of an egg, in the anterior portion of the frontal lobe, imbedded in the centrum ovale. The gyri over the tumor were somewhat flattened.

Mental confusion and slowness of cerebration, as suggested by Starr, may be due to the interference with the functions of the commissural and association fibres existing beneath the cortex of the frontal lobe. Lesions of the centrum ovale beneath the cortex of the posterior part of the left third frontal gyrus produces partial or complete motor aphasia. The three following cases prove this statement:

First, taken from Jaccond, *Gazette Med., 1878, No. 2.* A patient suffering from nephritis became suddenly aphasic with paralysis of the muscles of the right side of face; motion of extremities perfect, sensation intact. Ten days afterward the patient could utter a few words; three months later an autopsy showed in the posterior part of the left frontal lobe two cysts adjacent to each other, one, size of a pea, the other three times as large. They were confined to the white substance beneath the posterior part of the third left frontal gyrus. The cortex of this gyrus was found normal.

Second, taken from *Gaz. Hebdom, 1864, No. 44;* Ginthac. A man aged sixty-one became partially paralyzed on the right side after an apoplectic attack. In five days movements returned in the affected side, with at the same time a return of intelligence, but there remained a complete motor aphasia. Twenty days after the attack patient died of pneumonia. Examination showed a softening, the size of a small egg, in the left centrum ovale beneath the third frontal lobe.

Third, taken from *Bull. d. Societie Anatomie, 1876, 491,* Mayor. Patient (male), forty-three years old, suffered from an apoplectic attack, which caused a permanent paralysis of the right side, with motor aphasia. The right facial muscles were only slightly involved, the tongue not at all, it being freely movable. Could say "yes" and "no," etc. Intelligence normal. Died from kidney disease. Post mortem showed lesion in the pons, size of a hemp seed, and in the left hemisphere an old softening in the centrum ovale just beneath the third left frontal convolution.

In a lesion beneath the island of Reil of the left hemisphere we find an interference with the function of the association bundle between the sensory receptive center of the temporal lobe and the motor or emissive speech center in the posterior part of the third frontal gyrus, producing paraphasia or "the asphasia of conduction" of Wernicke. This is shown by the following case:

Arndo, *Berliner klin. Wochenschr., 1870, No. 42.* The patient, after an apoplexy, remained paralyzed on right side of the face d right arm. At the beginning there occurred the most exquisite misplacing of words, but with great care he could speak the right word. This, however, was always preceded by stammering. The misplacing of words gradually ceased, but the stammering continued until death. Autopsy showed that the island of Reil and the adjoining gyri (operculum) were normal. Only in the left centrum ovale of the frontal lobe, involving the fasciculus of fibres connected with the third left frontal gyrus, was there any lesion, the lesion being due to an aneurism causing pressure on this bundle of fibres.

A subcortical lesion beneath the posterior part of the second left frontal gyrus is productive of agraphia, as the following case of Seguin proves:

American Journal Medical Sciences, July, 1888. Patient suffered from epileptiform attacks for five years. These attacks always began in the right facial muscles; speech almost wholly suspended even when consciousness was preserved; could call "water" or "ice," but unable to talk. Had no motor attacks in hand alone, but was awkward with this member, and handwriting became bad. Afterwards right upper extremity became numb, speech slow and memory impaired. Examination showed weakness of right arm, normal gait, increase of the right patellar reflex, muscular sense normal, slight tactile anæsthesia in hand, particularly thumb and index finger, with distinct aphasic and agraphic faults. Diagnosis, cerebral tumor, involving the center of the face and arm in the left hemisphere. Operation showed a tumor distinctly subcortical about an inch and a half directly beneath the ascending frontal gyrus at the point of junction between this gyrus and the posterior part of the second frontal, in the fasciculus for the face. The after-results showed an almost complete inability to write from dictation, while copying was imperfect. Beneath the central gyri or motor areas symptoms might occur, the salient of which would be interference with symmetrical bilateral movements, indicating a loss of function of those commissural fibres of the corpus callosum which harmonize motor acts. If the lesion approaches the cortex, Jacksonian attacks will occur, with later paralysis, monoplegia being the rule. Disturbance of muscular sense might be observed and should be carefully looked for in each case. As the lesion approaches the internal capsule an incomplete hemiplegia will occur.

Lesions beneath the parietal lobe, particularly its ascending division and the superior parietal lobule, will produce, the nearer the lesion is located to the cortex, partial or complete anæsthesia of a limb; the nearer the lesion approaches the capsule the more general and complete the anæsthesia will be (hemianæsthesia).

The following case, reported by West in *Brain, Summer and Autumn Number, 1895,* will be interesting to mention, because the symptoms were chiefly sensory in character:

January 3, 1895. — The patient, a lad of sixteen, after receiving a blow on the side of his head, immediately felt dizzy, could not speak plainly, and had a feeling of numbness in the fingers of the left hand; ever since he has had headache, has felt weak in the left hand, has dropped things, and has had numbness in the fingers and palm. About three months ago his sight began to get a little weak, headache is worse and has attacks of vomiting.

Examination showed a slight weakness in left hand, with a weak grasp, and that sensation was impaired over left arm, hand and palm; double optic neuritis was observed; superficial reflexes were absent on left side, knee jerks were absent of both sides; sensation in left leg and face impaired.

January 17, 1895. — Some weakness in left leg and sensation was decidedly impaired; weakness of left hand was greater, and the anæsthesia increasing, the hearing was now noted to be greatly impaired; the watch could be heard just one inch from the ear; the hearing in right ear was normal. The writer's conclusion was that the seat of the disease was in the white matter, and probably in such a position as to interfere with the posterior portion of the internal capsule. This conclusion was further supported by the loss of hearing which occurred late in the disease. The autopsy showed a tumor, the size of a walnut, lying in the right centrum ovale to the outer side of the lenticular nucleus. The most of the tumor was situated above the level of the basal ganglia; its lower and posterior part was surrounded by an area of softening which involved the external capsule and the posterior extremity of the internal capsule, extending backward into the occipital and slightly downward into the temporal lobe.

In this case it is fair to presume that the tumor was slow-growing, and that the early weakness and numbness, with slight anæsthesia of the left upper extremity, may have been due to implication of sensory axones, radiating towards the cortex, and that the slight weakness was due to pressure of motor fibres proceeding from the arm center. The increase of weakness with hemianæsthesia, coupled with sudden loss of hearing, was due to the softening which was observed chiefly in the posterior part of the internal capsule. It is very odd indeed that hemianopsia was not observed late in the disease, and it is to be regretted that a careful search for defects in the muscular sense was not instituted.

In connection with the foregoing case, I insert the following case of Vetter's, whose clinical history resembles it closely, and it is more carefully recorded (*Deutchse Archiv für klinische Medecin, No. 22 Bd., p. 421*):

A middle-aged man, in perfect health, in July, 1875, became sick with headache, general weakness and a gradually increasing weakness of the right arm; afterward right-sided convulsions occurred, beginning in the right arm, where they were most prominent, extending to the muscles of the neck, then to the trunk. The face muscles were not affected. At the height of the convulsion consciousness was lost. When severe attacks occurred the left arm sometimes became convulsed. After each attack the right arm became weaker. In the beginning of September the patient remained in bed with fearful headache, which was confined to the frontal and occipital regions. Suffered from sleeplessness, and vertigo on arising from the horizontal position; face, tongue, speech, intelligence, visual fields and eye muscles normal; the right upper and lower extremity paralyzed. In the course of the month signs of agraphia were detected; there was loss of muscle sense in the right arm and leg, there was tactile anæsthesia in the hand and foot, and at the end of September there occurred analgesia in the whole right side, including the right side of neck and face. The disease progressed rapidly, and death occurred October 8th.

Section. In the upper left parietal lobe existed in the centrum ovale a soft glioma, which reached downward as far as the insula; in addition, a small glioma of recent date was found beneath the cortex of the left occipital lobe. The central ganglia and the cerebral convolutions were found normal.

The above-mentioned case, as well as the cases of Seguin, Osler and myself, prove that lesions located in the centrum ovale may excite typical Jacksonian attacks. It is interesting to note that in this case a gradually increasing paresis of the right arm preceded the Jacksonian attacks, and this same fact has been noted in a number of cases of lesions in the centrum ovale, and for some time it was thought that this mode of onset was diagnostic of centrum ovale lesions. Besides this, we note ataxia, most marked in the right arm, less in the leg, with tactile anæsthesia of the same hand and foot, and complete hemianalgesia, all of which symptoms were due to compression or destruction of the sensory axons on their way to the cortex of the parietal lobe. The agraphic faults observed in this case may have been due either to ataxia in the right arm or possibly to interference with the fasciculus of fibres coming from the writing center. If the lesion be beneath the occipital lobe in the region of the cuneus and adjacent white matter, involving the optic radiation, one would expect to find symptoms, due to irritation, of hallucinations of vision of an hemiopic character, with partial or complete hemianopsia. The latter is shown in the following case:

Wernicke and Hahn, *Virchow's Archiv, Vol. 87.* Idiopathic abscess of occipital lobe. Patient, merchant, age forty-five; had phthisis. Suffered from severe headaches on left side in frontal and occipital regions. Observed a haze before right eye, coming and going. Also noticed that he could not see objects on the right side. At the same time became weak, emaciated, cachectic, was forgetful without any other disturbances of intelligence. A paralysis of right halves of the field of vision was observed, but the ophthalmoscope showed no change in the fundi. A marked ataxia of the right hand followed, so much so that the patient was unable to use it. Ten days later patient's intelligence was good, answered questions correctly, facial muscles and tongue were free from any trouble, but there was paralysis of right arm, also slight affection of the muscle sense of right arm and hand. Operation showed that an abscess, about the size of a hen's egg, existed 4 cm. beneath the cortex of the occipital lobe. It contained one and one-half ounces of pus. The patient died, and a post-mortem showed a tubercular abscess in the centrum ovale, which began at the lower part of the posterior horn of the lateral ventricle, extended forward to the frontal lobe and above to the upper portion of the superior parietal lobe.

There are no focal symptoms whereby a lesion beneath the right temporal lobe could be diagnosticated. If, however, the lesion be beneath the left upper and middle temporal gyri, incomplete sensory aphasia or word deafness would probably occur, owing to interference with the auditory receptive mechanism. Wernicke has proved that total deafness, central in origin, is due to a double lesion in the white substance of the temporo-sphenoidal lobes, owing to the destruction of the central auditory tracts.

Wernicke and Friedlander (*Fortschr. der Med., 1883*): A woman forty-three years old was taken in September, 1879, with headache in the frontal and temporal regions, and there occurred several times weekly epileptiform attacks, which lasted about fifteen minutes. Gradually movements of the left hand became uncertain. The patient would let objects fall from her hand because she could not grasp them properly. In April attacks of the following kind occurred: shaking of the left hand, afterward the elbow was bent and hand straightened, then the shaking appeared in the shoulder; she would then become unconscious. At about the same time she began to suffer from great thirst, and drank quantities of water. She then became very quiet, appeared stupid, and could hear only when one cried out loudly to her. Prior to this the patient could hear perfectly; vision normal. January 22d an apoplectiform attack occurred, producing right-sided hemiplegia, with aphasia. When she returned to consciousness it was discovered that the patient could not understand what was said to her. Was discharged from hospital August 4th and readmitted September 10th, when it was discovered that her left arm was paretic. The paralysis of the right side had passed away; absolute deafness existed. Early in

October marked leukæmic changes in the blood were discovered. *Autopsy.* — The first and second left temporal gyri were involved in the new growth, as was also the entire corona radiata of the temporal lobe. The growth reached posteriorly in the second temporal gyrus as far as the occipital lobe. In the right hemisphere only the posterior and upper part of the temporal lobe was involved. The greatest change was found in the inferior parietal lobe, which extended backward, involving the angular gyrus and the occipital lobe. Sections showed that beneath the inferior parietal lobe the white matter, in a locality where the corona radiata of this lobe and from the temporal gyri meet, was destroyed by the lesion.

If the diseased focus be beneath the left angular gyrus, the fibres which conduct sensory visual impressions from the common sight center to that gyrus being partially or totally destroyed, incomplete word blindness would follow. A patient being unable to read, if his hand be made to trace the letter by another person, or raised type be used, can recognize the letters. He has thus energized his visual memory center through his muscle-sense perception. Starr proves this by giving references to four cases (Vide, *Familiar Forms of Nervous Diseases, p. 70*), where deep-seated lesions in the centrum ovale of the occipital lobe affected the association fibres passing to the angular gyrus.

There are on record several cases with autopsies where lesions affecting the great association tract beneath the occipital and temporal lobes of the left side, the fasciculus longitudinalis inferior, produced auditory amnesia. The patient, although being unable to energize his auditory receptive speech center, can recall the name of an object when heard, but the sight of the object does not bring its name to mind. He can bring to mind the name of the object by other aids, especially that of his muscular sense. Both of these conditions, *i. e.*, incomplete word blindness and auditory amnesia, are classified by Freund under the term sensory optic aphasia.

The following case of Freund, recorded in the *Archiv für Psychiatrie und Nervenkrankheiten, 1889,* is one illustrating sensory optic aphasia:

C. S. L., age fifty-seven, entered hospital March, 1886. Died July 13, 1886. Since August, 1885, patient has shown a peculiar change of manner, is irritable and easily flies into a passion, but is easily calmed. His expression was heavy; now and then fell into a confused state; could not recognize different coins; since beginning of year there has been a general weakness with considerable pain in the frontal region. He has an uncertain gait, without any apparent paralysis. In February, 1886, he had to give up his occupation, owing to general weakness, and because of increased mental dullness. He uses a superabundance of words, and his expressions were hardly intelligible. His memory has greatly deteriorated. On entrance to the hospital he was in a condition of great excitement, and thought all about him were drunk, and was surprised that his friends did not observe their condition. He understood perfectly all that was said to him; spoke rapidly and could utter single words without hesitation; could repeat words; when he spoke spontaneously and wanted to bring out a concrete idea, the principal word at the moment would be forgotten, although the chief thought would not, but he would replace the chief word by wrong synonyms. He could not name more than half the objects placed before him. A number of these he could not recall at all; a few he could remember after thinking a few moments. He stated that he could see the objects perfectly, and that they did not appear changed. Objects placed in his hands when his eyes were closed he could name quickly and correctly, as coins, metals, corks, etc. Alexia and paragraphia were discovered. He could not read correctly; what has already been written he cannot read, but in the case of numerals he did not make many errors. *April 7* — Right-sided homonymous hemianopsia was discovered. No neuritis was present. *May 21* — Patient cannot understand what is said to him, nor read a single word correctly. *June 6* — Almost complete mind blindness.

Notes of Autopsy. — In the right hemisphere a sarcoma of the parietal lobe, with marked change of the parietal and occipital lobes, was found. In the left hemisphere extensive softening of the white substance of the temporal and occipital lobes. Sarcomatous nodes were found in the posterior portion of the corona radiata of the parietal lobe. The posterior portion of the corpus callosum was also involved. Anteriorly the softening in the white matter extended forward as far as the frontal lobe.

The important features of this case are as follows:

First. The patient failed to remember the principal word in a concrete idea, and would substitute for that word wrong synonyms (paraphasia).

Second. Objects were recognized in their true nature, but he was unable to name them. If, however, his eyes were closed he could recognize the name of the object when placed in his hand, thus bringing to his aid his muscular sense.

Third. He had right-sided homonymous hemianopsia.

The first of these, paraphasia, may be explained by the extensive softening of the left hemisphere extending forward to the region of the frontal lobe.

Owing to the complete right-sided hemianopsia, which was due to the destruction of the left optic tract, before reaching its destination, the visual center, the patient could have known the nature of seen objects only through the right visual center. This case, with others of a like nature, has led Freund to formulate the following theory, that is, that the recognition of the object, *i. e.*, the memory of its appearance, is stored up in the right hemisphere (angular gyrus?), while the recognition of the object as written is stored up in the angular gyrus of the left hemisphere.

The lesions found in this case, extensive softening of the white matter in the occipital lobe and the posterior part of the corpus callosum, are sufficient to explain the second point above referred to, causing a destruction of the band of connection between the right and left visual centers in the corpus callosum. The patient was unable to name the object after seeing it, but owing to the fact that he could recall the name of the object through the aid of his muscular sense, shows that the association band between the latter center and the left angular gyrus was intact. From this latter center an impulse was excited through its connection with the motor speech center, and thus the individual named the object.

There are no symptoms of a general character which absolutely stamp the lesion as being either cortical or subcortical. According to Seguin, the absence or late appearance of headache would lend support to the diagnosis of a subcortical lesion. In my case headache was a prominent symptom from the onset, and according to Mills and Lloyd, up to 1890, in only five cases of cerebral tumor was headache missed.

A careful perusal of the histories of lesions of the prefrontal lobes shows that there are no symptoms of diagnostic value in differentiating sub-cortical from cortical lesions in this area, lesions in both localities producing absolutely the same group of symptoms.

In the motor area a lesion either cortical or sub-cortical may be followed by paresis or paralysis of either an arm, leg or face on the side opposite to the lesion, but in the great majority of the recorded cases of cortical lesions convulsions of the Jacksonian type have preceded the weakness or paralysis, while in most sub-cortical lesions the paralyses have been very gradual in their onset, and the unilateral convulsions have appeared after the paralysis, coming on late in the case, or have never occurred at all. The latter mode of onset was observed in the cases of West, Darkschewitch and Carson.

If in addition to this mode of onset, *i. e.*, a gradual increasing weakness with or without a later appearance of unilateral convulsions, there is added paræsthesia, followed by a gradually increasing anæsthesia of a limb, one may be almost confident in diagnosticating a centrum ovale lesion beneath the sensori-motor area.

In this connection the cases of West, Darkschewitch and Vetters illustrate this symptom complex. In West's case a tumor the size of a walnut, located in the left centrum ovale, caused at first numbness, weakness and anæsthesia of the left upper extremity, without convulsions. In Darkschewitch's case, one of a like nature, the salient symptoms were as follows: a gradual development of right brachial monoplegia, with symptoms of a brain tumor — the lower extremity and face were not involved; there was marked diminution of all forms of sensibility of the right arm; no unilateral convulsions were recorded. The autopsy showed a tubercular tumor in the left centrum ovale beneath the arm area. The case of Vetters, recorded on pages 507-508 of this paper, is one where paresis preceded the unilateral convulsive seizures, and where the sensory disturbances began in an unusual manner; first a loss of muscular sense in the right arm and leg, tactile anæsthesia in the right hand and foot, and about two months later analgesia of the right side occurred. At the autopsy a tumor was discovered located in the left centrum ovale of the parietal lobe, the central ganglia were found normal, and no mention was made of any lesion affecting the internal capsule, so that it is fair to presume that the capsule was found normal.

It is exceedingly improbable that such a gradual selection of the sensory fibres could occur from a lesion involving the posterior part of the internal capsule. Clinical evidence shows that a lesion of slight extent in the posterior part of the internal capsule would have produced at once far greater sensory disturbances than occurred in the above-mentioned case, from a lesion that existed for quite a long period. Therefore, the case proves that the above-mentioned symptoms coming on in a gradual manner point to a sub-cortical lesion beneath the sensori-motor area.

The following symptoms, viz., paraphasia, deafness of central origin, sensory optic aphasia (Freund), with or without hemianopsia, prove that the lesion is sub-cortical. Paraphasia is due to an interference with the fasciculus of association between the auditory sensory receptive center and the motor speech center, the centers themselves being intact. Secondly, deafness of central origin, which is a very rare condition, is caused by destruction of the central auditory tracts in the centrum ovale of the temporo-sphenoidal lobes. Thirdly, Freund has proved by a critical résumé of eight cases, that sensory optic aphasia is due to interference with the tracts of association in the white matter of the occipital and posterior part of the parietal lobes. The case of Freund, recorded at pages 510-512, shows that psychical blindness may be due to extensive lesions of the white matter of both occipital lobes, the cortex not being involved. It is understood that what has been written concerning paraphasia and sensory optic aphasia refers entirely to lesions of the left hemisphere.

CONCLUSIONS.

First. No general symptoms exist indicative of sub-cortical disease.

Second. Paresis or paralysis of one or more limbs gradual in onset, accompanied by sensory disturbances, with or without the late appearance of Jacksonian attacks, indicates centrum ovale disease.

Third. Any one of the following conditions proves that the lesion is in the centrum ovale: paraphasia, sensory optic aphasia, and deafness of central origin.

Editorials.

Typhoid Fever. The following general directions of Sir William Gull to the attendants when the Prince of Wales was suffering from typhoid, more than twenty-five years ago, are just as applicable to-day, and cannot be too often reiterated:

1. Typhoid is a disease which runs a more or less definite course. It cannot be stopped or cured simply by medicine.

2. The chief thing to be done at the outset of an attack is to send the patient to bed so as to save strength from the beginning.

3. No strong purgative medicines are desirable.

4. As the fever develops and the strength grows less, light food should be given at short intervals. This must be directed medically, but in general it may be said that the amount required is that which induces repose and sleep.

5. The bowels may be left to themselves. If unmoved for twenty-four or thirty-six hours, a lavement of warm water may be necessary.

6. The restlessness or wakefulness in fever is best remedied by the careful giving of wine or spirits with the food or in water. Sedatives such as opium are inadmissible — most injurious.

7. The bedroom should be kept at a temperature of 62° to 64°.

8. Great care is necessary to keep the bed clean and sweet. This is most easily done by having in the same room a second

bed, to which the patient can be removed for two or three hours daily whilst the other is thoroughly aired and the linen changed.

9. All fatigue is to be sedulously avoided. No visitors should be admitted, and no other person than a nurse and one attendant to help her

10. The patient should never be left unattended for a moment, as in the delirium of fever he might jump from bed and injure himself

11. As to medicines and the treatment of complications the immediate medical attendant must be responsible.

12. As the discharges from the bowels in typhoid fever are a source of contagion, it is desirable that before being thrown down the closet they should be largely mixed with some disinfectant. On the same principle the strictest cleanliness must be observed in the sick room.

13. There is no reason to believe that typhoid fever is contagious from individual to individual in the ordinary way. The largest experience shows that it does not extend like an ordinary contagious disease to nurses or others attending upon patients suffering under the disease.

The Military Hospital at Fort McPherson.

Dr. Edgar A. Vander Veer, recently returned from this hospital, where he has served since the beginning of the war with Spain, makes the following comments upon the experience gained in attending upon the sick and wounded. The ANNALS hopes in an early issue to print a more extensive communication from Dr. Vander Veer:

"Fort McPherson is situated six miles from Atlanta, Ga., and is the station of the Fifth United States Infantry. It was selected as an army hospital on account of its central location and admirable facilities for the care of the wounded and sick. With the possible exception of the present camp at Montauk Point, it is and has been the largest military hospital in the country, and has been free from most of the defects which are reported of the other hospitals.

"There were twelve physicians in charge beside Major Taylor, who was in command. They arose at 5:45 A. M., and went to sick call at 6:15. This generally lasted an hour and a half. At 9 they reported at the hospital, where it was their duty to inspect the wards for two hours. Each man had charge of two wards and was supreme there. A note of whatever was needed was sent to the surgeon-major commanding, and he drew on the hospital fund and bought the supplies in Atlanta.

"There was no lack of nourishment, food and even delicacies for the patients. They had plenty of milk and ice. Very little meat was given them, but they had beef tea, eggs, oatmeal, custard and such invalid foods. After the wounded became convalescent they had the regular rations of the companies stationed at the post. There was no lack of funds with which to purchase extras. A soldier, while he is in the hospital and living on hospital fare, receives the value of his regular army rations in cash. This money is put into the hospital fund, and keeps it in good shape all the time.

"When the hospital was first established there were 400 beds in it. This number was increased to 600, and later to 1,000, and then there were few vacant. Once a week the train arrived, bringing 150 patients, 125 of whom were afflicted with typhoid fever. The rest were wounded from Santiago, or those sick with dysentery and different kinds of fever. Out of 1,000 typhoid cases there were 50 deaths. Most of the sick came from Tampa, but there was one train load from Chickamauga, and they were the worst of all. The water at Fort McPherson came from driven wells 2,000 feet deep, and could not be polluted by surface drainage. We had 235 wounded from Santiago under our care. They were the easiest cases to attend, and recovered with astonishing rapidity. Only one wounded man died of all that entered the hospital. As I have seen it stated several times, the Mauser bullet makes such a small, clean hole that the wound closes and begins to heal almost at once. All the Santiago men came to us with aseptic dressings already on their wounds, and needed little but good food and care. There were several cases of men having been hit by comrades firing from behind. These wounds were made by Springfield bullets and were easily distinguished from those inflicted by the Spaniards. One noticeable thing was the large number of men who had wounds in their feet. This was particularly the case with those who had been in the San Juan fight. It is probable that a fire from a higher elevation has this effect."

Albany Medical College: 60th Session.

The regular session began with the introductory lecture by Prof. Merrill, delivered in the college amphitheatre, before the faculty, alumni and students, September 27th. The four-year course, inaugurated a year ago, is now fully arranged, and a legal requirement. During the summer many improvements have been made in the college building. A new floor has been placed in the chemistry lecture-room, together with a full set of new improved chairs, with side pad rests for the students. The walls and windows have been repainted, and the room is vastly improved in appearance.

Alumni Hall, on the south end of the college, has also been improved by a full set of new chairs with side desks. This room is now utilized by Dr. Hailes for his lectures in histology and histo-pathology, and for demonstration upon the screen by the electrical microscopic projection apparatus and the X-rays.

Changes in the faculty include the promotion of Dr. Van Rensselaer to the full professorship of materia medica and therapeutics, and adjunct to the chair of the theory and practice of medicine; and the addition to the corps of instructors of Drs. Richardson, Brierly, Lipes and Bradley. Dr. Stillman will continue the lectures upon the "History of Medicine," and Dr. Hennessy, formerly lecturer upon materia medica, has been made adjunct professor in the same department.

Scientific Review.

On the Advisability and Efficacy of Surgical Gynecological Treatment of Hysteria and Mental Alienation. — G. Angelucci and E. Pieraccini have published the results of a world-wide inquiry into these subjects, which has been translated and abstracted by W. H. Happel in the *American Journal of Insanity, July, 1898:*

The authors were prompted to this inquiry by the fact that many cases reported as cured by the surgeons sooner or later relapsed and were again confined in institutions for the insane, by the fact that they (the authors) had seen cases of violent insanity following removal of the internal sexual organs, and by the fact of the contradictory statistics and still more contradictory opinions of authorities. The method of inquiry was as follows: Alienists and surgeons (gynecologists) were asked, through a circular letter, (*a*) whether they had treated in their asylums during the last ten years, or whether they had observed in their private practice or in hospitals, cases of insanity following the removal of the uterus and appendages for the purpose of treating hysteria, and how many cases; (*b*) whether, in case an affirmative answer was given to (*a*), the uterus, etc., were found healthy or diseased; (*c*) whether in the last ten years they had treated, or had had occasion to observe in their private practice and in hospitals, cases of insanity following surgical operations performed on the internal sexual organs in the case of women previously not hysterical, and how many; (*d*) finally, a personal opinion was requested with regard to the advisability and efficacy of surgical (gynecological) intervention in the hysterical neurosis.

Incidental to this inquiry were elicited facts of a very important nature with regard to the influence of suggestion in the surgical treatment of hysteria.

The observers contributing facts and opinions consisted of: Italians, 28; French, 13; Swiss, 2; Germans, 56; Austrians, 15; Belgians, 5; Dutch, 4; Norwegians, 1; Russians, 1; Irish, 3; Scotch, 5; English, 13; Americans (U. S.), 15; (Canada) 3.

The result is divided into two sections: I. Clinical facts. II. Opinions of alienists, surgeons and gynecologists on the question discussed.

SECTION I. — CLINICAL FACTS.

GROUP I. — Hysterical women who became insane after removal of uterus or adnexa, to relieve the neurosis, 17 cases.

Analysis. — The final result is known in but 14 cases. Of these, 3 died insane, 9 are still confined in institutions, 5 of these for terminal dementia; 1 is improved after 2 years of insanity, and 1 only *seems* cured after 3 months' treatment in an asylum.

In 11 of the cases a double ovariotomy was done, preceded in one case by a clitoridectomy and in another by amputation of the cervix uteri; in both with a negative result; in 2, unilateral ovariotomy; in 2, removal of ovaries and uterus at one operation. In the remaining 2 cases the exact extent of the operation was not specified.

GROUP II. — Hysterical women who became worse after surgical (gynecological) intervention instituted to relieve the neurosis, 10 cases.

GROUP III. — Hysterical women remaining unimproved after operations on the internal genital organs performed for the purpose of treating the neurosis, 13 cases (at least).

Analysis. — With the exception of 2 cases out of these 23, the one of which suffered from an anteflexio uteri, and the other from small cysts of the ovaries, all the organs removed were found healthy. There were done 10 double ovariotomies, 5 complete hysterectomies and ovariotomies at one operation, 1 replacement operation for anteflexion. The operations in the other cases are not clearly specified.

GROUP IV. — Hysterical women who became insane after the removal of the uterus or adnexa, done for the purpose, not of treating the neurosis, but of relieving them of diseases of the internal sexual organs, 3 cases.

GROUP V. — Hysterical women remaining unimproved or becoming worse with regard to the nervous disturbances, after operations done on the uterus or the adnexa for the purpose of relieving them of pathological changes of the internal sexual organs, 6 cases at least.

Analysis. — The 3 cases of Group IV it was necessary to confine in asylums; the first suffering from hysterical mania, the second from melancholia, and the third from "mental disturbances." The first is still confined; the second was cured after 6 months, but soon relapsed; the final outcome in the last is unknown.

GROUP VI. — Hysterical women on whom removal of the internal sexual organs had an uncertain result, 1 case.

GROUP VII. — Hysterical women cured of their nervous disturbances by operations on the normal internal sexual organs, performed for the purpose of treating the neurosis, 3 cases.

Analysis. — The first case of Group VII was one of very severe hysteria, in which, as a last resort, a vaginal hysterectomy (with removal of the appendages) was done. The second case was one of hysteria manifesting itself at the menstrual epoch. The nature of the operation is not stated. The third was a case of hysteria accompanied by most severe abdominal pains and almost irrepressible vomiting, which caused extreme emaciation in the patient. A hysterectomy was performed. In the first case the cure has lasted for many months; with regard to the second case, although spoken of as a "great success," nothing is known as to the length of time during which the patient remained cured. In the third case the cure dates from 1890. It is clear that while a certain amount of attention should be given cases 1 and 2, case 3 is really the only one which possesses any value.

GROUP VIII. — Hysterical women cured of their nervous disturbances after operations performed on their diseased internal genital organs, 9 cases at least.

Analysis. — In 3 cases there was a certain relation between the convulsive crises of the hysteria and the menstrual period. In the first a resection of the left ovary for a sessile fibroma was made; in the second, a double ovario-salpingectomy for pseudo-tuberculosis (?); and a bilateral ovariotomy for cystic degeneration in the third.

GROUP IX. — Hysterical women whose disease was favorably influenced through suggestion, by means of pseudo-operations (gynecological), at least 6 cases.

One of these cases is sufficiently interesting and characteristic to merit a more detailed description.

The patient at puberty (13 years) was seized with very severe attacks of hystero-epilepsy. All treatment medically (hydrotherapy, suggestion and special treatment in a hospital) failed. Finally, under the advice of a surgeon a double ovariotomy was performed, when the ovaries were found degenerated and atrophic, following a progressive ovaritis. The patient made a good recovery and appeared cured of her hysteria for several months, and the case was then reported as one in point in an Italian medical journal.

Several months after the operation, however, there occurred a sanguineous flow from the genitals, which being interpreted by the patient as menstrual, she again became hysterical, and during her convulsions so violent that it was necessary to employ a strait-jacket. She finally re-entered a hospital and demanded another operation. The surgeon finding the abdominal organs normal, decided to try suggestion by means of a pseudo-operation.

The patient was then informed that the ovariotomy previously done would be completed by a salpingectomy, and that any subsequent flow would not be menstrual, but simply a flow from the uterine mucosa. A simple incision of the abdominal skin was then made, preceded by all the serious preparation and extensive display of apparatus necessary for a laparotomy. The after treatment was also that of the same operation. The effect was wonderful; the severe attacks ceased entirely, and there remained only the slight attacks which had existed previous to and in conjunction with attacks of hysteria major. It is not possible to say whether the result was permanent, as the patient passed from observation.

In a second case the pseudo-laparotomy was involuntary, it being necessary to interrupt a true laparotomy because of the patient's intolerance of chloroform. The wound was closed and the patient allowed to harbor the illusion that she had been subjected to an ovariotomy. This case had been of 15 years' standing and has remained cured for 4 years.

GROUP X. — Not hysterical women (at least according to the clinical histories) who became insane after operations on the diseased internal sexual organs, at least 25 cases.

Analysis. — The operations consisted of 1 ventro-fixation of uterus for retroversion, of 2 cauterizations (actual cautery), 1 perineorraphy, 1 perineal plastic operation for prolapsus, 2 salpingectomy, 1 ovariotomy and supravaginal amputation of uterus, 7 bilateral ovariotomies, 3 suprapubic hysterectomies, 3 vaginal hysterectomies.

In all cases the operations were done for disease or some allied condition. In 9 cases only is the special condition mentioned, and it consisted in prolapsus uteri (2), retroversion (1), suppurating salpingo-ovaritis (1), endometritis (2), tumors of uterus (3).

GROUP XI. — Women who were not hysterical according to the clinical histories presented who became neuropathic after operations on diseased internal sexual organs, 2 cases.

GROUP XII. — Insane women, many of them hysterical, who became worse or remained unimproved after gynecological operations performed, either for the sole purpose of treating their mental condition or with the double intent to influence their psychic disease, and at the same time to relieve them of disease of the internal sexual organs, at least 19 cases.

GROUP XIII. — Insane women who became better or were cured of their mental disease after a gynecological operation, performed for the purpose of treating their alienation, 7 cases.

Analysis. — G. XI. The neuropathy consisted of hyperæsthesia and slight nervous disturbances.

G. XII-XIII. There were at least 10 cases in which the operation had no effect, and at least 9 in which it had a bad effect. In one-half of the cases the organs removed were healthy; in the other, diseased.

The operations consisted of ovariotomies, hysterectomies, and in 4 cases of complete removal of all the parts.

The forms of mental alienation which were attacked were in 9 cases hysterical psychosis (6 of whom became worse), in 2 periodical (menstrual) insanity, in 1 epileptic psychosis; the others were left undefined.

In 7 cases, 5 of which were cases of hysterical psychosis with attacks of periodical mania, amelioration or cure was obtained. In 2 of the 5 an amelioration was secured, and in 3 a cure.

In 1 of the other 2, a case of severe hysteria after a double ovariotomy, the disturbances continued for a "long time," but finally disappeared and have not recurred.

In the other, a case of insanity after double ovariotomy, a cure resulted.

Only 7 cases then may be looked upon as more or less complete successes, while 16 were complete and well-established failures.

SECTION II. — OPINIONS OF ALIENISTS, SURGEONS AND GYNECOLOGISTS.

Unpublished opinions of surgeons and gynecologists on the advisability and efficacy of operations on the uterus and adnexa in hysterical women.

There were received 76 replies from alienists. Of these, 56 were unfavorable to surgical (gynecological) intervention in hysteria. Some are content to consider this treatment as simply inefficacious. Some of these attribute favorable results rather to the influence of suggestion. Others claim that such intervention is decidedly harmful; others finally condemn this method of treatment as directly culpable, and the degree of disapproval expressed is the more lively the higher is the writer's standing as a psychiatrist. Twelve of the remainder did not believe themselves authorized to give an opinion, alleging lack of experience; five others were uncertain; three only were favorably disposed toward gynecological surgery as treatment of hysteria.

From surgeons and gynecologists there were received 18 replies. Of these, 13 declared themselves decidedly opposed to surgical treatment, some of whom were persuaded of its uselessness, others of its decided harmfulness. Five declared themselves in favor of surgical interference, but all accentuate the necessity of a close relation between the symptoms of hysteria and diseased internal sexual organs as an indication for the operation. Two of the latter even declare a total or partial extirpation of the healthy internal sexual organs to be harmful. By far the larger portion of observers are, then, agreed that the removal of normal parts for the treatment of hysteria is to be condemned, and the following reasons are advanced by various of them:

1. Personal clinical experience has demonstrated its inefficacy and even harmfulness.

2. The modern conception of the pathology of hysteria tends to hold that the diseased conditions of this ailment are grafted on a degenerate nervous and mental constitution.

3. The disease to be combated consists of a general neurosis, essentially psychic in nature, joined with a profound alteration of metabolism.

4. Hysteria is a general disease of the entire organism.

5. Hysteria is to be considered as essentially a mental malady, a psychosis.

6. The genital theory of hysteria is to be considered erroneous. One observer found congenital absence of the uterus in a woman undoubtedly hysterical; another has never noted any improvement in hysteria whether sexual intercourse was used moderately or otherwise; marriage has often rather aggravated the hysterical state; in convents hysteria is very rare; according to some observers, one-half the prostitutes of Paris are hysterical; hysteria attacks equally young girls before puberty, married women, and those that have passed the climacteric; well-marked cases occur among men.

7. Hysteria is a psychic ailment, which never depends immediately on a disease of the sexual organs; and since its seat is in the brain, and more especially in the cerebral cortex, it cannot be contended that it may be cured by an operation on the internal sexual organs.

8. Hysteria is a distinct neurosis, a cerebral and not a uterine or ovarian affection. The uterus and its appendages, therefore, are not the *locus morbi;* the cause of hysteria does not reside in the genital organs, be they healthy or diseased; the diseases of

the uterus have but little connection with hysteria, and it is to be held that the supposed influence of disease of the uterus and appendages on hysteria has been much exaggerated.

9. It is difficult to diagnosticate special lesions of the appendages, and it is not allowable to operate, taking into account only temporary functional disorders of these organs.

10. Ovariotomy exercises a harmful action on the mind, weakening the affections toward the family, the husband, the children; and because frequently enough there appear hysterical manifestations after these operations performed for another purpose and in different parts, or because such impressions are provoked in the mind of the women as to lead them into insanity.

11. This treatment is not tolerated by neuropathics; and also because in laparotomies, inspired by necessities differing from those prompting this inquiry, an aggravation of the nervous phenomena after the operation has not rarely been noted.

12. The operation is too extensive and brings with it a notable change in the personality, while its success is at least always uncertain.

13. It often happens, in grave functional alteration, that by this mutilation are provoked more profound and more serious disturbances in the nervous centers.

14. The removal of the uterus or appendages is too serious an operation to be undertaken as a remedy for a disease ordinarily not dangerous in itself.

15. To the surgeon must be denied the right to remove organs like the uterus and the ovaries in subjects fit for conception, simply for the supposititious cure of the nerves and mind; and if it is desired to make use of suggestion — and nothing more is to be hoped for from operation than the results of suggestion purely — means must not be employed which, in spite of their relative harmlessness, represent a peril to life and an irreparable mutilation.

16. The symptoms, in fact, only quiet down — and simply through the effect of suggestion — after the operation. while the disease soon begins again to manifest itself by identical or different symptoms, often of a more severe character.

17. We have at our disposition means more harmless and less uncertain (hypnotic suggestion, tonics, electricity) by which

a percentage of cures may be obtained, very notable in comparison with the very small one to be expected from the operative method.

18. The results vaunted by operators are but ephemeral, the patients entering asylums shortly after the triumph of surgery has been proclaimed. The brilliant results obtained by some are to be attributed exclusively to suggestion.

19. The method is not curative in any case, is debilitating, often retards the cure, and is sometimes fatal.

20. By analogy no one would dare to propose the castration of hysterical men with healthy testicles.

CONCLUSIONS.

The cases collected numbered 117, from which it was possible to study the result of operations on healthy and diseased organs, performed firstly because of functional disturbance of the nervous system; secondly, to remove pathological conditions of the internal sexual organs in patients suffering from hysteria, insanity, or simply neuropathic conditions.

If we omit the 6 cases cured or benefited by pseudo-laparotomies, there remain 111 cases, in which number are but 17 upon whom the surgical treatment had exerted a beneficial effect. In the remaining 94 cases there were 44 women who became insane (20 hysterical, 24 not hysterical before the operation); 25 others previously insane or hysterical who became worse; 2 others previously not hysterical who became neuropathic; and finally 23 others, some insane, others hysterical, who continued to suffer in the same degree from mental diseases or hysteria after the operation as previous to it.

Of the 17 cases cured, 12, to use the phrase employed by the reporters themselves, had suffered from nervous disturbances, so that it is not impossible that the disease may not have been true hysteria, at least not of the major type, especially so since of these 12, 9 were operated upon for disease of the internal sexual organs. In 3 only the indication considered sufficient for operation was the neurosis itself.

In the other 5 cases treated with favorable results, in which the operation was performed for the purpose of treating hysterical psychoses with periodical outbreaks of mania, the reporters speak of "appreciable improvement in two cases, of apparent (*sic*) cure in the other three." If we compare this uncertainty and paucity of results with the happy ones obtained by others through suggestion (pseudo-operations), we are right to doubt whether it was not suggestion rather than the operation itself which produced results in the former.

Finally, in summing up the verdict rendered with such accord against the advisability and efficacy of this system of treatment, by alienists, clinical psychiatrists, clinical surgeons, clinical gynecologists, the authors conclude as follows:

I. Removal of uterus or appendages when normal as a remedy for hysteria or insanity is to be proscribed.

II. Hysteria itself is a contraindication to the surgical operations employed to treat gynecological cases.

III. Nothing but the gravity of an existing disease of the internal sexual organs should constitute an indication for such operations, independently of any considerations as regards the hope of influencing in the end the neuropathic condition of the patient.

IV. In such cases it is possible to profit by the operation made indispensable by the pathological condition of the internal sexual organs, only by attempting to exercise suggestion advantageously on an existing neuropathic state.

V. Finally, only for the purpose of suggestion, and when all the means reputed more efficacious to combat hysteria have been tried without result, is it allowable to have recourse to simulation, even to the sanguineous one of a laparotomy.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D.

The American School of Osteopathy. — Scattered promiscuously about the country, without reference to any particular body or thing, are the catalogues of the "American School of Osteopathy," of Kirksville, Mo., for 1898-'99.

The catalogues of the regular medical colleges are distributed with discretion to students and physicians and those interested in or connected with the science of medicine or its allied sciences;

not so with the catalogues and circulars of this great school of osteopathy, which are thrown about to the masses, and not only describe in glowing terms the advantages and the greatness of osteopathy, but attack and ridicule the principles of the science of medicine and surgery. It is clear that the principles of osteopathy stated in the catalogue are put forth to impress the ignorant, as they are too absurd to impress the intelligent.

The charter of this school is granted by the State of Missouri under the section of the law which provides for "the establishment of literary and scientific institutions." It comes within that law by having five professors to teach anatomy, pathology, histology, chemistry and surgery, and incidentally "six" professors, four of whom bear the same surname, to teach "osteopathy." Including assistants, its faculty is made up of seventeen members.

A section of the catalogue, entitled "An Explanation of Osteopathy," and which covers nine pages, is much less an explanation than a tirade against the science of medicine; in fact, it is a continuous assault against a science many centuries old. In it are quoted in a manner to reflect grossly against the authors and against scientific therapeusis, such men as Prof. Magendie, Sir Astley Cooper, Dr. Oliver Wendell Holmes and Dr. Broadley, turning the words of these broad-minded and fair scientists to the aggrandizement of a delusion.

Under the head of "Course of Study" is the paragraph: "In toxicology, the common poisons, their symptoms and their antidotes are made the subject of careful study." It is interesting to note that the osteopaths do not rely upon the manipulations of muscles, nerves and bones to counteract the effects of poisons; in this they recede from their so-called principles in using other therapeutic agents than manipulation.

Osteopathy has received legal recognition in five States, having Missouri for its stronghold. It behooves the medical profession in other States to keep a watchful eye upon this class of faddists and extremists. They have been refused legal recognition in several States, but mean to continue their fight. The place to watch for them is in the halls of legislation, that no bill legalizing their practice may creep in and become a law.

The Patent on Diphtheria Antitoxin.— The patent granting Dr. Behring the exclusive right to sell diphtheria antitoxin in the United States has opened the eyes of the medical profession in astonishment. It has made many wonder what the end of the nineteenth century would develop in the way of variation from the humanitarian principles which have for centuries clothed the profession with respect and elicited the praise of the world. It seems as though the fight for the almighty dollar had warped the humanitarian, moral and ethical principles so long cherished by the profession. It is a strange period, indeed, which witnesses the self-sacrifice and devotion of the profession in war, the straining of every nerve to prevent or alleviate the suffering of the poor; and at the same time see the previously honored and lauded members of the profession drag their names in the mire of disgrace and contempt by letting their greed for the dollar overcome their desire to lessen the sufferings of mankind. It is against all the creeds and natural instincts of the profession.

Dr. Behring has been accused of patenting a process, in the perfection of which he has only contributed a part, turning to a questionable profit the work of many men; this accusation might also be followed by one which every true physician would shrink from — absence of purity of purpose in his life's work.

We understand that there was some hesitation on the part of the government in granting the patent, and that five attempts were made by the representatives of Dr. Behring to obtain the patent before they were successful. The fact that it was granted after so much delay on the part of the United States patent office is difficult to understand. There must have been some question of the legality of the patent, but the manufacturers of phenacetine and sulfonal were granted patents, and diphtheria antitoxin is in the same class. The laws, however, are defective, when, under them, patents can be obtained on such substances. The *Philadelphia Polyclinic* for August 13, '98, in an editorial arraignment of Dr. Behring under the head of "Ichabod," says: "This patent, as preposterous as it is inhuman, may for the present be legal, but it is not just."

We are gratified to learn that the manufacturers are going to fight the patent, not admitting its legality. Should it be enforced it would be at a cost to life and health; the health boards of the large cities could no longer manufacture it for use among the poor, where it is most needed and does the greatest good, without paying a high tribute to the patentee; indeed, they might not be allowed to manufacture it at all.

American physicians are satisfied that the serums of home manufacture are superior to those of foreign make, and Dr. Behring or his representatives cannot say that a patent is necessary to prevent the manufacture and sale of weak or impure serums, for we are strongly fortified against the sale of inferior serums. In many States all the diphtheria antitoxin serums, domestic and foreign, are frequently tested by the State Health Boards, and each serum must reach and retain a high standard of potency and purity. It is not unreasonable to presume that the superior merit and increased sales of the domestic serums over the foreign have led the foreign manufacturers to patent the article in the United States, where great quantities are consumed, thus compelling them to use the foreign article. But if this is the case, why did Dr. Behring lend himself to such a discreditable business?

The patent laws should be revised; that seems to be the only remedy. Patents should not be granted on medicines which are discovered, not for the purpose of "making money," like many articles in the mercantile world, but which are worked out by scientists in their efforts to find something to prevent scourges of disease, something to save life and to prevent or alleviate suffering.

Medical News.

THE COHOES HOSPITAL ASSOCIATION. — The following appointments have been made: Drs. Witbeck, Parker and Haynes, chief physicians; Drs. Mitchell, Featherstonhaugh and Archambault, chief surgeons; as assistant physicians and surgeons, Drs. Ross, Montmarquet, Campbell, McGarrahan, Peltier, Archibald, Daunais, Carruth, Mott, Bell, Gervais, Chartrand, Egan, Noonan, Smith, Furbeck and Rogers. The chief physicians and surgeons, with Drs. Blumer and Bendell, constitute the medical staff. The following schedule of charges has been fixed: private patients, D. J. Johnson memorial room, $15 a week; Mgr. Dugas' room, $12 a week; Harry G. Calkins' room, $12 a week; small wards, $8 a week; city cases, $4 a week.

THE ALBANY COLLEGE OF PHARMACY. — The introductory lecture of the eighteenth annual session will be delivered by Frank Richardson, Ph. G., director of the Pharmaceutical Laboratory, in Alumni Hall, on the evening of October 3d. The regular work of the year will begin with the junior lecture Tuesday evening, October 4th. The laboratories and lecture-rooms in the Medical College building used by the College of Pharmacy have been renovated and embellished during the summer recess.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. — The twenty-fourth annual meeting is to be held in Nashville, Tenn., October 11-14th, inclusive. Sessions are to be held in the House of Representatives of the State Capitol, and headquarters will be at the Maxwell House.

THE PSYCHIATER. — The ANNALS has received the first number of this new periodical, " a journal containing a report of scientific work at the Illinois Eastern Hospital for the Insane." The contents of the number are: " Professional Work in Hospitals for the Insane," by W. G. Stearns, M. D.; " Report on Three Cases of Brain Tumor," by A. F. Lemke, M. D.; " The Early Diagnosis of Paretic Dementia," by V. Podstata, M. D.; and " Laboratory Psychology as Applied to the Study of Insanity," by W. O. Krohn, M. D. The *Psychiater* is to be published four times a year at the annual subscription price of two dollars, and the appearance of the first issue warrants the prediction of a successful career for the new journal, and wide acceptance, especially by all interested in neurological and psychiatrical work.

AN ARMY MEDICAL BOARD will be in session at Washington City, D. C., during October next for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before October 1, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between 22 and 29 years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the Board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

GEO. M. STERNBERG, *Surgeon-General, U. S. Army.*

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS. — The eighth annual meeting of the New York State Association of Railway Surgeons will be held at the Academy of Medicine, in New York City, November 17, 1898, under the presidency of Dr. C. B. Herrick, of Troy.

GEO. CHAFFEE, *Sec'y.*

BROOKLYN, N. Y.

Current Medical Literature.

The Value of Fasting in Acute Infectious Diseases. — Dominicis, in the *Wiener med. Presse, No. 18, 1898,* claims, after investigations, that fasting within definite limits and wisely enforced renders men and animals more resistent to bacteria and their toxins. The reason of this lies in the fact that food, even if it be only milk, when it is not well digested, undergoes putrid changes and interferes with the relations of the tissues and their secretions to the toxins and lowers their resistance to the bacteria. Clinical experience, especially in pneumonia, has strikingly established the favorable influence of fasting and of disinfection of the gastro-intestinal canal.

Intravenous Injection of Normal Saline Solution. — Dr. Horace T. Hanks contributes a paper upon this subject to the September *American Gynæcological and Obstetrical Journal.* The danger from severe accidents and operations is due to loss of blood, traumatic injury of soft parts, and septic absorption, with obstruction of the bowels and suppression of urine. For prevention the patient may be prepared by judicious stimulation during the six hours preceding an operation. For loss of blood from any cause, from severe traumatism, for the early stage of sepsis after an operation, and for the suppression of urine and obstruction of the bowels after an operation, Dr. Hanks advocates the use of intravenous injections. The solution may be made by adding a teaspoonful of table salt to one pint of pure water, the solution to be sterilized and used at about 115° F. In over twenty patients upon whom Dr. Hanks has practiced this treatment there has been no accident, and in only three cases was the injection followed by a chill, which was quickly relieved by morphine and brandy hypodermatically. In conclusion he urges the importance of:

1. Proper preparation before an exhausting operation by systematic stimulation or by intravenous injection.
2. Intravenous injection for bad shock, using full three pints or more of normal saline solution.
3. Intravenous injection of two quarts or more of normal saline solution after dangerous hæmorrhage.
4. Intravenous injection for remarkably feeble pulse after, or even before, operation.
5. Intravenous injection for septicæmia, especially when an operation is decided upon. Use from one to two pints and repeat if bad symptoms return.

VOL. XIX NOVEMBER, 1898 No. 11

ALBANY
MEDICAL ANNALS

Original Communications.

INTRODUCTORY ADDRESS.*

BY C. S. MERRILL, M. D.,

Professor of Ophthalmology and Otology, Albany Medical College.

Gentlemen: In the name of the faculty of the Albany Medical College I welcome you to this classic and historic amphitheater, and in their behalf assure you of their sincere wishes for your welfare and distinction as students, and of their sympathy and assistance in all your worthy aspirations and efforts during your student years.

Be assured that the members of the faculty have a personal interest, even solicitude, outside and above their routine attention to their duties as instructors, that in all places and at all times would express itself in an ever ready disposition to consult with and advise you regarding any difficulties in your thought and work.

Be assured also that they will have as much pride as you will have in your progress in your studies, and that your high attainment will give to them, as to you, great happiness.

Students do not often think as they ought of the intimate relationship of teacher and pupil in aim and accomplishment.

And I would impress it on your minds deeply at the present time, when it may begin very importantly to direct and benefit your whole career.

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* Delivered at the beginning of the 68th Session of the Albany Medical College, September 27, 1898.

You may rely upon it that the faculty of the Albany Medical College will not be strangers in your midst, but will be friends in communion with you upon all occasions.

They will be close and true friends inside and outside of college walls, to side by side lead you on the path of knowledge to the most illuminating and sacred fount.

Theirs, indeed, will be a parental love, since they would have you do the best you can, because it is right for you to do the best you can, and because in their foresight of your disappointment, on account of any failure, they will be troubled and grieve for you whenever for any reason you have not done your best. With all their faith and hope they would have you develop to the utmost all that within you lies.

This doing of one's best in whatever one attempts seriously is a fundamental law of life, and is confirmed by the observation and experience, during his own moral and intellectual growth, of every good and great benefactor of mankind.

The law is obligatory upon every student at his start, but more especially upon you, who bear the grand but awful responsibility of fitting yourselves to undertake the custody and care of human lives which are momentarily exposed to danger of sickness and death, and where ignorance or carelessness is one of the greatest crimes against man and God.

But, gentlemen, neither the friendship and fostering care of the faculty, nor your hard study under their direction, by textbooks, lectures, laboratory and hospital, can of themselves qualify you to do the best you can. You must acquit yourselves like men and be strong.

To some general reflections on how to acquit yourselves like men, and be strong as students of the medical profession, I would now invite your favoring response.

I will not say anything of the noble character of the medical profession, which I will presume that you are convinced of, else you would not be assembled here for orders to the front; nor of the glorious record of the medical profession in the discovery and application of data for preservation of health, as well as for cure of disease, about which you are soon to know.

But I will hold your attention to consideration in certain ways of your relation as medical students to the medical profession, in order that you may understand how much the relation reveals of the need of beginning forthwith to try to do the best you can in adequate preparation for the medical profession.

Your relation to the medical profession is, in the highest sense, moral, and ethically is determined according to your moral standing as students; on the leading principle that the relation of every thought to its act ought always to be, and ultimately is, moral, that it may contribute along with every other thought and act of mankind to universal good.

The moral worth of the practitioner of medicine depends upon how the resultant of his thought and acts contribute to universal good, and your moral worth as students of medicine, in turn, depends upon how the resultant of your study and thought qualifies you to become such a practitioner.

These definitions are purely altruistic, but they are made after due analysis and comparison of the facts of consciousness and experience, in testimony of the possibility of realization of man's highest aspirations, but not necessarily, within my purpose, by any help of Biblical authority.

Altruism is, indeed, taught by all that we know of the earth and man, and to learn all we can by study and practice of medicine, in order that we may love humanity and serve it, is really the supreme reason why we study and practice medicine, and why you who have just entered our institution as students should begin to study medicine.

This conception of duty which requires love and service of humanity above aught else must sooner or later for your success be an ever present guide.

Scholarship and ability for what they bring of riches, power and station are of no account in this definition, but scholarship and ability for the good that they can do in the world are of the greatest value.

We may hold quite firmly to this conception of medical duty in study, but we may not cling to it so tenaciously in practice, on account of our weakness under the materialistic influences of the close of our century; but none the less we are bound to resist whatever opposes such a conception of our duty, and try all the while to illustrate and enforce it.

I beg you to strive for the highest proficiency in your studies, that you may love humanity and serve it.

With such a conception of duty you will understand at once how much it depends for full power upon *moral character and education*, which, logically, next present themselves for separate reference.

Moral character is identified, in the first place, by faith and trust in an all-wise and ever-present creative power that lovingly evolves and points man to a higher destiny than what we term life, according to and by means of His laws and man's consequent obligations.

It is next identified by loving observance by man of these laws and obligations, all of which act for human goodness.

You may come to this faith and trust as you will, but arriving at it as you must, love, charity and self-sacrifice, when it is necessary, are imperative upon you from the nature of the medical profession, which, in the final analysis to determine its purest qualities, deals with the consequences of sin and wrong through violation of Divine laws and man's obligations; and which profession is confronted continuously with the gravest problems of man's whence, where and whither by existence.

Theoretically, although in fact there never can be one such born and grown of the human, the good and great physician should be a perfect physical and moral man.

Imagine, if you please, his god-like stature and presence and the halo around him as he bends over the bedside of the sick and the dying one.

With what hope is his coming greeted?

With what peace and rest is his tarry accompanied?

With what a thanksgiving of looks and words is his departure followed?

Surely to him belongs the blessing: "Well done, good and faithful servant. Enter thou into the joy of thy Lord!"

I have spoken of the relation of the moral character of the medical student to the medical profession, and have said little or nothing directly of the relation of moral character to your manhood.

It was unnecessary, because you have known by heart the true principles of manly character from childhood, when, at your mother's knee, you learned to repeat the Lord's Prayer.

I will allude to this relation only to express confidence that in and out of college, during your connection with it, you will be steadfast to your home instruction and training, never to do wrong, but always to do right.

And in this way I am sure you will be true to this institution with whose fair and distinguished name we now, to a large extent, entrust you, for your safekeeping, until you graduate.

Education, upon which depends, secondarily, our conception of medical duty to love humanity and serve it, is associated with moral character inseparably, not only on account of its invaluable help to conform conduct to duty and make conduct more efficient, but also for its reflective influence ever to purify and develop moral character itself.

By education, as I make use of the term, I mean broad and thorough intellectual training from both within and without the medical profession.

Your duty as students here confines you to seek education within, first and foremost all of your time.

For assistance to you in the four years that you are with us, while preparing to begin, as we hope, an honorable life-work, the faculty have arranged the course of study so wisely that with your earnest co-operation you may receive sound and most serviceable instruction in medical science.

The course keeps in view every requirement in instruction to secure orderly and thorough advancement to as good scholarship and skill as is possible, until when, as alumni and physicians, you add practice to study by yourselves.

It rests altogether with you, gentlemen, whether or not to attain to this scholarship and skill. If you do your part as well in your turn and place as in our intent we have done and shall do our part, we can assure you of very worthy attainment.

Education from without the medical profession, of which I must speak as well, is quite different from education from within, as I have just described it.

There is nothing provided in your course of study for education from without, not because you do not need it, but because it is left to you to provide it accordingly as you love it and have time to spare for it from the close attention our subjects require.

Education from without, in fact, is more exacting the greater the education from within, the former being characterized most by patient and unending search everywhere for what will contribute to more extended and more exact knowledge. It has helped to some of the most valuable medical discoveries and applications for human good.

It demands everything that may be of assistance, in nature and life, and in every department of literature where there are data of the laws and processes of nature and life.

According to this definition of education from without there is even something worth observing and remembering in the city street and in the country lane, in assemblies of the people and in the field and wood beyond the habitations of man, in society and in solitude.

But education of this kind is not merely utilitarian to your study and practice; by its communication of love and taste for and insight into truth and beauty of nature and life it becomes essential to the soul for its spirituality.

All education from without that is directly in extension of your instruction by text-book, lecture, laboratory, and hospital, or indirectly by cultivation of love and taste for and insight into truth and beauty, should be availed of as a need. You cannot get too much learning, if it is the right kind of learning, and is orderly gathered and stored for right use.

In this connection let me speak of certain habits of study that are suggested by the context and that perhaps may have more immediate interest and more practical use.

Habits of study are more or less peculiar to the individual on account of personal nature and faulty instruction, one student being attracted to a subject from which another is turned, and one learning easily what another learns with difficulty, and so on, with personal characteristics opposing each other until, little by little, there appears in every college a marked difference in the sum and quality of individual knowledge.

I would have you believe that this difference in individual attainment may be lessened or avoided altogether, to the advancement of many backward students and the elevation of the standard of scholarship of your class and college.

There is no royal road to learning, but the road to learning is a common highway to the rich man and the beggar at his carriage wheels, to the high and the low, and the good and the bad. And he who stumbles and falls when he enters upon it may be among the foremost at the end of his travel, while he who is strong in his pride for a long distance may drop exhausted by the wayside and be forever left behind.

Believe in your individual capability to become as proficient in knowledge and ability as anyone in your class.

Have faith that with intelligence and discipline you having talent may keep pace with him having genius in the long run, which is the run that wins every time.

To begin with, it is certain that the more difficult you find the way the better on the whole it is for your progress; for while you are overcoming obstacles you are getting more and more the mental training which is the source of the greatest intellectual strength and power, and which will enable you to surmount the greatest obstacles.

Find out as near as you can the quality and measure of each faculty of your mind, and cultivate the weaker to equal the stronger faculties, and then develop their equilibrium as high as you please.

Your mind may be weak in will, perception, conception, analysis and comparison, judgment or memory, of which you may be informed by self-examination.

When you know just where it is needed, discipline continuously at regular times the weaker faculty or faculties with as great fidelity as you discipline the weaker parts and muscles of your body itself.

And when you have secured a fair equilibrium of faculties apply them in study so closely that the subject will become a part of your intellectual life, so to speak.

But do not forget that you are to apply your faculties first and most in the ways your course of study requires, and which we are confident are the best for you as undergraduates.

Our purpose is, and your purpose should be, complete mastery of one subject before you take up the next succeeding subject.

While the best method of study is the one that fully masters a subject soonest, most any method will answer, if you only "get there," to adopt an expressive Americanism. But every method ought to be comprehensive, clear, continuous and regular, and adequate to instruct fully and fixedly, and not be injurious to health. It must regard the varying difference in need of physical exercise of different students to maintain the proper relation of mind and body for reciprocal good; it must estimate it accurately and take care that each student has his proper share of physical exercise.

It must especially regard the tendency to mental exhaustion and its harmful consequences from long continuance in one line of thought, the same as in the case of the body in one line of labor, and insist that this tendency be watched, and that when it is so strong as to threaten ill it be opposed by recreative thought, as by change to some other division or relation of the subject of study.

The mind may be cultivated prodigiously to one line of thought by observance of the right regimen.

Yet whatever the equilibrium of your mind in strength and power, and whatever your method of study, you must love study with all your heart and soul.

And you must love study for itself as the only way of acquisition of knowledge.

In the brilliant light of modern science the Creator has set no bounds to the acquisition of knowledge, but in His love He has ordered that acquisition shall depend solely upon human wishes and efforts.

I address you as medical students, not as physicians; freshmen upon entrance, not seniors upon graduation, and I would impress it upon you to love study now and here, and later throughout your practice. I am aware of the danger of interference of love of study for acquisition of knowledge, with application of knowledge, as illustrated in the bookworm.

It may be obstructive or preventive of that communication of what is learned that is due to the world for common benefit, but the true scholar knows it not. His only will and only light along his pathway are to seek knowledge in order to impart knowledge.

And now, gentlemen, with your continued favor, and mindful that the close of my address is not very far away, I would review what I have thus far said, for the more condensed and forcible presentation that the theme and the occasion demand.

In the first place, I would have every student before me resolve to believe that he has a mission in the world, for which he must now begin conscientiously to qualify himself, in order that he may faithfully perform its work.

Encouragement of this belief was the leading purpose of my introduction, wherein I insisted that the highest conception of medical duty was to love humanity and serve it.

It is true in all history that every good and great man who has wrought nobly for his day and generation has believed, in our sense, that he had a mission to do what he has done, and for which he is remembered.

It is true also in our experience that whoever is distinguished above his fellows in service, either in theology, medicine or law, in science, art, literature or business, has believed he had a mission, or a part resembling it in character and spirit, and has felt with sacred devotion that he must do the best he could continuously to fit himself.

If you in your turn and place believe you have a mission, you will understand readily that moral character is of the most consequence. Indeed, no matter how great your learning and ability may be, you will fall short of your highest possibilities if you do not cherish it.

Character in the medical profession has supreme tests to try its refinement of good qualities, but when it proves itself it is most noble and illustrious.

Education was found to rank next to moral character for your help. You were asked to rely first upon education from within your course of study, under direction of the faculty, and then to avail yourself of education from without and from all sources where you might be instructed.

When you came to studying from without you were to seek what was strictly collateral to your course, and would cast more light upon it before you sought the more or less remote learning which, while contributing to finish and grace of scholarship, brought dignity and influence to you as a man and a physician.

You will remember these words; you cannot get too much learning if it is the right kind of learning, and it is orderly gathered and stored for right use.

What was said on education was brief, but was intended to be conclusive for your guidance.

Incidentally to education I tried to deal practically with certain habits of study, remarking, to begin with, that you must have faith in your capability to equal in scholarship and ability any one of your classmates, and suggesting self-examination to estimate the quality and measure of your mental faculties, and advising discipline of the weaker to make them equal to the stronger faculties; and then application of them in their equilibrium so effectively as to make any subject a part of your intellectual life.

No one method of study was preferred, and it was required principally and only that the method you employed should master a subject completely, and advance you in an orderly way, and without injury to your health. You will recall that it was affirmed that the mind under intelligent control might do prodigious work, and that will be expected of you.

Lastly, regarding habits of study, love of study for itself as the only way of acquisition of knowledge was made necessary above aught else.

Gentlemen, with conclusion of my purpose to encourage you to your best endeavors in study of medical science, I bear in mind that your thought will naturally now go forward to the opportunities of the professional field of practice.

I say your thought will naturally go forward, because it is impossible for you as students to do more now than to begin to believe that you have a mission in life, and to realize the obligations that it implies.

If you believed now as you may believe by and by, that you have a mission, you would not question about opportunities, but opportunities would in their suggestiveness crowd upon you so thick and fast that you would only question where and how to control them to the best advantage.

You would be convinced that to the full extent of vision opportunities are limitless. For with all the struggles of the leaders of men to morally and physically make mankind better, healthier and happier, sin, disease and suffering are calling for relief on every hand.

It is not expected, however, that you should believe at once that you have a mission, since belief, outside of religion, is nowadays a matter of growth in observation and experience in worldly affairs, and is not Divinely inspired. But it is expected that you should try to believe, and I would have you try from this moment to believe that you have a noble mission, and begin to study and act as if you had, and leave to time to prove it.

Regarding the field of medical practice, you need have no doubt. It is being so widely extended by division and subdivision into departments for special inquiry and treatment that, notwithstanding modern enlightenment in the prevention and cure of disease, and in prolongation of life you are sure of finding room enough somewhere for all your service.

The sick and the dying you have always with you, and as the years come and go a larger number of people will look appealingly to you as saviors from pain and death.

I repeat that there is no end of opportunities to him of the medical profession who believes he has a mission to love humanity and serve it.

I give it you, young gentlemen, strictly in charge that you ever try to believe, study and act as such.

23 WASHINGTON AVENUE

THE DIAGNOSIS OF EXTRA-UTERINE GESTATION.*

BY GEORGE E. GORHAM, M. D.,
Albany, N. Y.

Under the beacon-light of asepsis surgery has made rapid strides during the last decade. The surgeon's field is no longer confined to traumatisms and tumors of slow growth, but many acute conditions are added to the diseases amenable to successful surgical treatment. With this advance a new and important duty falls upon the general practitioner, viz., the diagnosis. A fibroid or a fracture may wait for a correct diagnosis; not so with ectopic gestation or appendicitis; here an immediate diagnosis is important and often imperative. Therefore this short paper reviewing the

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*Read at the 47th Annual Meeting of the N. Y. State Homœopathic Medical Society, Syracuse, N. Y., September 22, 1898.

DIAGNOSIS OF EXTRA-UTERINE GESTATION.

The first requisite in making a diagnosis is a knowledge of the anatomical relations and functional activities. The Fallopian tubes skirt the free borders of the broad ligaments, and about two-thirds the surface of the tube is imbedded in the broad ligament, so that when a tube ruptures from the pressure of a growing ovum it may rupture on the unprotected portion of the tube, and the ovum pass directly into the peritoneal cavity, or it may rupture into the broad ligament, and thus escape the peritoneal cavity (constituting, in the first instance, primary intra-peritoneal rupture, and in the second, primary extra-peritoneal rupture), the ovum simply pushing its way out from the over-distended tube into the tissues of the broad ligament. In normal pregnancy the impregnated ovum attaches itself to the endometrium, and there begins development, terminating in about nine months in the birth of a child. In extra-uterine pregnancy the impregnated ovum attaches itself to the inner wall of the Fallopian tube, and there begins embryonic growth. The cause of this accident is unknown; many theories prevail. The most plausible one to my mind is that normally the ovum is impregnated in the uterus, but occasionally spermatazoa pass through the Fallopian tube, and the ovum becomes impregnated before reaching the uterus, in which case rapid development of the ovum takes place, as well as an inherent tendency to attach itself to adjacent tissues for sustenance. The rapid growth prevents transit of the oosperm along the tube, and, following its natural law, attaches itself to the inner wall of the tube. A perilous future awaits an ovum thus attached, and greater danger and distress await the unfortunate woman. Like the uterus, a tube often aborts; frequently the ovum from hemorrhage within itself becomes a mole, and any time before the tenth week a pregnant tube may discharge its contents into the abdomen through the abdominal end of the tube, thus constituting tubal abortion. Failing to abort, the tube must rupture before the end of the fourteenth week. If rupture occurs in the side of the tube imbedded in the broad ligament the layers of the ligament are separated, and the gestation sack simply moves into the more spacious quarters of the broad ligament, where, if there has not been too much hemorrhage, or death to the ovum, it may continue its growth, and if not overtaken by the vicissitudes that naturally beset, go on to full term.

If, on the other hand, rupture occur on the unprotected side of the tube, the ovum falls directly into the abdominal cavity. If this occurs early, before the end of the first month, hemorrhage may be slight (a few ounces), and the patient make a slow recovery. If later than the first month, hemorrhage will be profuse, and sudden death the probable result. These are the general features of a primary rupture, which always occurs, according to the best authors, not later than the tenth to the fourteenth week. Secondary rupture, which is rupture of the broad ligament, may occur at any time after the tenth week, and is always attended by profuse hemorrhage and shock.

One peculiarity of tubal gestation is that the decidua forms in the uterus, and not at the site of the gestation sack. This is usually expelled after the first month in shreds, together with some sanguineous flow.

The above are some of the usual pathological and physiological points to be kept in mind when considering extra-uterine gestation. The diagnosis of such condition before rupture is very difficult, and frequently the patient does not consult a physician until after rupture has occurred. Usually the woman has the ordinary symptoms of pregnancy — suppression of the menstrual flow, etc. Added to these symptoms there will be strange abdominal sensations and pains, and after the fourth week usually some sanguineous discharge from the vagina, and at this time a soft, movable tumor can be detected in one tube or the other. It is seldom, however, that the physician is consulted before primary rupture. A woman who has carried a gestation sack in the Fallopian tube long enough to distend it to the point of rupture should present about the symptoms just detailed, and at the time of rupture experience a sharp, sudden, agonizing pain in the abdomen, faintness and nausea and pallor and shock commensurate with the amount of hemorrhage. It is the usual experience of the general practitioner, I think, to be called upon suddenly to diagnose extra-uterine pregnancy, and usually at the time of rupture, or immediately thereafter. The symptoms and conditions produced by a primary rupture vary according to the age of the gestation sack and the point of rupture in the tube. If a rupture of the tube occur early, before the fourth week, or if abortion of the tube occur before the fourth week, we may have at the time of rupture simply severe colicky pains, attended with only a slight hemorrhage, which would escape into the broad ligament or the peritoneal cavity, and there be absorbed, and the patient make a slow recovery; but such terminations are not frequent. The gestation sack is more liable to continue its development and vascularity a week or two, or more, and then rupture directly into the abdominal cavity with profuse hemorrhage and with all its attendant symptoms — shock, pallor, faintness and rapid pulse, usually vomiting — or we may have at this time rupture into the broad ligament and the hemorrhage be arrested, and the development of the sack continue in the broad ligament. Careful digital examination will disclose at this time a flexible, movable, painful tumor in one tube or the other, and by careful questioning we may usually learn that the patient has skipped one or two menstrual periods, and that she had strange abdominal pains, and that for some days preceding the present attack she has had some sanguineous discharge from the vagina. The pains and flow from the vagina may suggest uterine abortion. In fact, the differential diagnosis is sometimes difficult. It is cleared up, however, by examining shreds of the decidua usually being expelled at this time, chorionic villi being present in uterine gestation and absent in tubal. In case the primary rupture is a rupture into the broad ligament, without death to the embryo, and without profuse hemorrhage, the patient will go on in rare cases to term, terminating in spurious labor; but usually secondary rupture occurs long before the end of the gestation period. Primary rupture, and the symptoms preceding and attending it, may have escaped the physician entirely, and he be called for the first time to the bedside of the patient who has suddenly experienced secondary rupture.

A terrifying sight will meet his gaze — the deathly pallor, weak and rapid pulse, cold perspiration, agonizing pain in the abdomen and probably some bloody discharge from the vagina. Distress and terror reign generally, not only with the patient, but among the friends and attendants. In such cases, if one can succeed in getting the history of arrested menstruation and of more or less strange abdominal pains and experiences, there is little doubt that we are dealing with a case of extra-uterine pregnancy, with rupture.

It is hardly the province of the general practitioner to go into the differential diagnosis, speaking of the similarity between rupture of a pyosalpinx and other uterine conditions, and extra-uterine pregnancy. These points I hope may be brought out in the discussions by the specialists present. I have tried to give, in a general way, what has been given us from Tait's teachings in 1888 on the subject to the present time. The following points I deem worthy of special emphasis: That extra-uterine pregnancy is, as compared with most uterine conditions, an acute disease, something new and strange that has come upon the woman; it is different from the ordinary pains and backaches. Consequently, if a woman during her child-bearing period skips her menstruation, and begins to have peculiar abdominal pains and strange sensations, and then at any time within four or ten weeks is taken with a sharp, sudden, colicky pain, which is severe and different from her past experiences, she should be suspected of having extra-uterine pregnancy. Any woman who has had disturbed menstruation for two or three months, with abdominal pains, and some slight show at times, and is then taken with sudden severe abdominal pain, with pallor and signs of shock, probably has rupture of the gestation sack, with severe internal hemorrhage.

160 HAMILTON STREET.

For the ANNALS.

NOTE ON A SYSTEM OF CLASSIFICATION FOR PATHOLOGICAL MATERIAL.

BY GEORGE BLUMER, M. D.,

Director of the Bender Hygienic Laboratory, Albany, N. Y.

Within the last year we have received on a number of occasions requests for a description of the system of classification used in this laboratory. As the system seems to be of use to others besides ourselves, we have thought it worth while to publish a short account of it. The plan is particularly suitable for use in laboratories where teaching is a part of the routine work, and where the material used in teaching must be so arranged as to be easy of access in a short time. The system is a decimal one, and is based on a similar classification for clinical material used by Dr. J. M. Mosher, of this city.

For purposes of classification the body is divided into nine systems, and each system is again subdivided into nine lesser divisions. In this way each particular organ, or type of organ, has its own class number, and as a further means of identification is supplied with a second number corresponding to its order of accession. To give an example, the alimentary system is class 4 and the vermiform appendix is sub-class 9 under this main division, so that all cases of disease of the vermiform appendix come under class 49, and one case is distinguished from another by a second number given to it from the order of its accession. So that the eighth specimen of disease of the vermiform appendix brought to the laboratory would be labeled class 49, No. 8; the twelfth specimen acquired, class 49, No. 12, and so on. The same number which is given to the specimen is of course put upon the bottle which contains it, upon the history sheet describing it, upon the slide containing the microscopic section, and upon the index card of the card catalogue used in connection with the specimens. The bottles containing the gross specimens are arranged in regular order on shelves, the classes being together, the numbers following one another in order. The microscopic slides are similarly arranged in flat drawers of a large cabinet. With such a system it is exceedingly easy to find in a few minutes either microscopical sections or tissue from any particular disease needed for class purposes, as in order to do this it is only necessary to refer to the card catalogue which gives the number of all specimens of any particular disease.

As specimens from autopsies contain a large number of pieces from different organs, and as it is necessary for the proper comprehension of such autopsies that these should be considered as a whole, rather than as separate specimens, all autopsies are classed under class zero, with the second number as before, according to the order of accession. The fact that each diseased condition found in an autopsy is indexed with the autopsy number in the card catalogue renders this material just as accessible as that from separate diseased organs or tissues.

The following is the classification at present adopted for pathological material. It is not presented as a perfect example of what such a classification should be, but simply as one which in the case of this laboratory has answered its purpose well. It would, however, be very easy for other individuals to vary such a list considerably according to their individual tastes and ideas, and as can be easily seen, a third subdivision of the secondary subdivisions on a similar decimal basis could be made if desired:

I. NERVOUS SYSTEM.
    1. Cerebral meninges.
    2. Cerebrum.
    3. Cerebellum.
    4. Pons.
    5. Medulla.
    6. Spinal meninges.
    7. Spinal cord.
    8. Peripheral nerves.
    9. Ganglia and sympathetic.

II. CIRCULATORY SYSTEM.
    1. Pericardium.
    2. Heart muscle.
    3. Endocardium.
    4. Valves.
    5. Arteries.
    6. Veins.
    7. Thoracic duct.
    8. Lymphatic vessels.
    9. Blood.

III. RESPIRATORY SYSTEM.
    1. Nasal cavities.
    2. Larynx.
    3. Trachea.
    4. Bronchi.
    5. Lungs.
    6. Pleura.
    7. Antrum.
    8. Frontal sinuses.
    9. Ethmoid sinuses.

IV. ALIMENTARY SYSTEM.

1. Mouth and salivary glands.
2. Pharynx.
3. Œsophagus.
4. Stomach.
5. Liver.
6. Pancreas.
7. Small intestine.
8. Large intestine.
9. Appendix.

V. GENITO-URINARY SYSTEM.

1. Kidney.
2. Adrenal.
3. Ureters.
4. Bladder.
5. Uterus and prostate.
6. Penis and clitoris.
7. Ovaries and testicles.
8. Tubes.
9. Urethra.

VI. HEMATOPOIETIC SYSTEM AND UNCLASSIFIED GLANDS.

1. Spleen.
2. Bone marrow.
3. Lymph glands.
4. Thyroid gland.
5. Thymus and mammary glands.
6. Pituitary gland.
7. Skene's glands.
8. Cowper's glands.
9. Tonsils.

VII. OSSEOUS AND MUSCULAR SYSTEMS.

1. Long bones.
2. Flat bones.
3. Irregular bones.
4. Cartilage.
5. Tendons.
6. Muscles.

7. Ligaments.
8. Fasciæ.
9. Joints.

VIII. SPECIAL SENSES.

1. Eye.
2. Lachrymal glands.
3. External ear.
4. Middle ear.
5. Internal ear.
6. Tongue.
7. Hair, nails, teeth.
8. Skin and subcutaneous tissues.
9. Mucous membranes.

IX. TUMORS.

1. Lipoma.
2. Fibroma.
3. Myxoma.
4. Myoma.
5. Osteoma.
6. Chondroma.
7. Adenoma.
8. Sarcoma.
9. Epithelial tumors.
   (Papilloma, epithelioma, carcinoma.)

In conclusion it may be stated that as the class to which a specimen should belong is decided by its gross appearances, a few mistakes naturally occur, especially in connection with tumors. The only effect of such a mistake is that the bottle containing such a specimen and the slide from it are grouped among a class of tissues with which they do not belong. The indexing of the specimen is always under its proper heading, however, as this is not done until after a microscopic examination has been made, and hence the number on the index card enables one to pick out the desired specimen however much it is displaced from its proper grouping.

14 JAY STREET.

For the ANNALS.

" BOO-HOO " FEVER.

BY WALTER F. ROBINSON, M. D.,

U. S. Medical Inspector at Honolulu; Lecturer on Electro-Therapeutics, Albany Medical College.

Shortly after the troops were settled in Honolulu there appeared among them a peculiar complaint somewhat resembling the grip. There were pains in all the bones, especially in the small of the back; generally severe headache, coated tongue, loss of appetite and some little fever.

It might be thought that these were mild attacks of malaria, more especially as there is malaria on the island. There were seldom chills with the attack, however, nor anything typical about the fever. It would be here to-day and gone to-morrow. The attacks would not last, as a rule, more than two or three days, and then the patient would feel as well as ever.

One symptom, however, was almost constant, namely, that of general depression and discouragement. The soldier would lose all his courage and interest in his duties and in the army in general.

All his good spirits would desert him, and he would only mope and wish to be sent home.

This condition is so peculiar and characteristic that it has received the name of the " boo-hoo " fever, and as such is known all over the island. Strangers are very apt to be attacked with it, and its cause is undoubtedly the new climatic conditions in which the system of the patient finds itself.

On this account the disease is sometimes called climatic fever. The bowels are generally bound up, and it is altogether a different disease from the diarrhœa which is so common in hot climates.

Both quinine and phenacetin are of value in this disease, and as already stated, it is of short duration and yields readily to treatment. It may fairly be compared to the distemper which affects horses when they are taken from one climate to another.

The cases seemed to occur entirely in the first two weeks of our stay, and they are now seldom seen.

214 STATE STREET.

Clinical and Pathological Notes.

A Case of Tubercular Bladder, Sacculated.

June 12th I first saw Mr. A. A., of Dormansville, aged 60 years, a tall (6 ft. 2 in.), spare man, erect in carriage, by occupation a farmer, industrious and a good worker; habits perfectly temperate. He gave me the following history: For something over a year he had had trouble with his stomach; would eat a hearty breakfast, dinner or supper, then vomit it entire, sometimes immediately, even before he had fairly completed the meal; at other times a few minutes would elapse before the vomiting occurred; rarely there would be a day or two when he did not vomit at all. Notwithstanding this unpleasant and debilitating symptom, he had continued about his work until ten days before I saw him. Examination of stomach, liver and heart revealed nothing. In the left inguinal region I discovered a tumor, in size about as large as an infant's head. Upon inquiry as to what it was, and as to length of time it had been there, he replied: "It is only my belly, and has been just so for years." I diagnosed a distended bladder. He said: "Impossible, for I have had no difficulty whatever in urinating; my urinary apparatus is all right." He passed water in my presence, voiding about one-half pint freely. I then introduced a soft rubber catheter, and drew off a little over three quarts of pale, amber-colored urine. The "belly" subsided, and he expressed much relief. June 16th I again saw him. He had used the catheter himself three times every 24 hours. He had not vomited since I used the catheter on the 12th. The urine now was cloudy and foul-smelling. Clinical examination showed a large percentage of albumen and much pus. His general condition was seemingly good. I washed the bladder with a boric acid solution (20 grains to the quart), and ordered the same done twice every 24 hours. June 19th, 2 A. M., I was sent for hurriedly. Found the patient in a state of semi-collapse; temperature 97° F.; pulse weak and steady; great pain; referred to bladder. Hypodermic of morphine relieved pain; digitalis, strophanthus and strychnia stimulated the heart for a time. About 12 o'clock, noon, muscular twitchings came on, and other uræmic symptoms presented. He became unconscious at 6 A. M. on the 20th and died at 9 A. M.

Autopsy held Tuesday, 3 P. M., 30 hours after death. Present: Drs. Wasson, Reed, Knowles and the writer.

The stomach was greatly distended, but showed no evidence of disease; bowels, mesentery and peritoneum normal; kindeys small, seemingly tubercular, right one cystic; bladder greatly enlarged, thickened and adherent; a sacculated lower third communicated with the upper two-thirds by a circular opening the size of a fifty-cent silver piece, shirred around its circumference like a tied bag. The mucous lining was covered with a black substance, dense and hard, the rugæ well marked, like a multitude of pockets, as it were.

Microscopic examination made by Dr. Chas. P. Knowles, of Buffalo, showed abundant tubercular deposits in the bladder. Kidneys also tubercular; showed new tissue; evidence of preexisting nephritis.

The case presents many peculiarities unnecessary to enumerate. I wish only to speak of two: First, the long continuance of the disease, with little or no constitutional disturbance until near the close of life; second, the appearance of purulent, fœtid urine after having first emptied the bladder with a catheter. I believe that the foul urine had been carried in the lower segment of bladder for years, the water in the upper segment being drawn off with the catheter, the urine coming down from the ureters, mixed with the dead urine in the lower segment, giving absorption. The lower segment, I believe, from its diseased condition, was incapable of absorption. CHARLES P. MCCABE.

GREENVILLE, N. Y., *Oct.* 18, 1898.

True Aneurism.

False or traumatic aneurisms of the smaller and more exposed arteries are comparatively common, while true aneurisms following accidents are very rare.

By false, we mean where the aneurismal sac is made up of new inflammatory tissue, whereas true aneurism is confined to tumors, the walls of which are composed of the walls of the vessel from which it springs. True aneurism is almost invariably preceded by *arteritis*, which results in artheromatous degeneration of the normal elements which compose the arterial wall.

Arteritis is induced chiefly by syphilis, nephritis, gout, rheumatism, septicæmia and kindred diseases. The following case is reported for its comparative rarity, as septicæmia following knife wound was the only cause that could be found.

The history is as follows:

Miss D. H., aged twenty, native of United States, and housewife by occupation.

The family history was negative so far as could be learned.

Personal history: Well as a child; menstruated at twelve; never had syphilis, rheumatism, gout or any kidney trouble.

Present trouble began three years ago. While using a rusty knife it slipped, inflicting three and one-half inches above the left wrist joint a lacerated wound three-quarters of an inch long, puncturing the radial artery at that point.

It bled profusely, and a physician sewed up the wound without anæsthesia. The second day afterward it "broke open," and another doctor who was summoned sutured the wound under chloroform. A day or two later it became very painful, the arm much swollen, and she was obliged to go to a hospital, where she was sent to bed and the arm submerged for three days in a hot bath. She was confined to her bed three weeks. The house surgeon told her afterward she had "blood poisoning" and came very near dying.

About three months afterward she noticed a small tumor at the point of injury, which "beat," as she expressed it. It continued to grow, and as it increased in size became painful on exertion, as when dancing.

Changes in the weather were particularly noticeable.

The last year it caused her more or less discomfort all the time, and any exercise, particularly playing the piano, would in ten or fifteen minutes force her to stop from numbness of the hand and sharp pain at the seat of the tumor, which radiated up the arm, even into the breast.

Upon examination there was found a spherical aneurism the size of a walnut, and she was advised to have it operated upon, which was accepted.

With the kind permission and assistance of Dr. Vander Veer, the case was presented to the senior class in surgery at the Albany Hospital, and the operation performed under cocaine anæsthesia.

It consisted simply of an incision extending from one inch above the tumor to one inch below, the aneurism dissected out, the radial nerve drawn to one side, and a No. 3 catgut ligature tied above and below, the artery cut just below the upper and above the lower ligature, and the aneurismal portion removed. The incision was closed with catgut, a light dressing applied, and patient allowed to go home, with instructions to remain quiet and use a sling.

A true aneurism induced by wound of arterial wall, followed by septic infection, due either to the knife wound or infected by doctor when treated, which is more likely.

C. HARPER RICHARDSON.

Editorials.

The Albany County Medical Society.

At the semi-annual meeting the vice-president, Dr. G. L. Ullman, in his address, dwelt strongly upon the social influence of a medical society in making physicians better acquainted with one another and more appreciative of each other's efforts. In all ages the jealousies and petty bickerings of physicians have been the subject of general ridicule. The cause was not that physicians were different from other professional men, but from the nature of their work they were easily misunderstood and their actions misconstrued.

Dr. Ullman said in part:

" The meeting and exchange of ideas by medical men is mutually helpful and elevating, and tends to the general broadening of medicine. As the separate bricks when put together rear the stately building, so the putting together of medical thoughts and experiences means the rearing of a greater and grander medical science. No one, however humble his place in medicine, but can bring his share to the advancement of the science which is the life-work of us all. * * * Environment, climate, race and social conditions may so modify disease that the experience of those in our own community may be of more service to us than those of some foreign observer. In no place are the opportunities greater for the acquirement of the experience of other physicians than in the meetings of medical societies.

"Medical societies have other spheres of usefulness. Organized bodies of medical men have duties to the community. The people have a right to the medical societies on hygienic subjects. The medical society should aid the civil authorities in protecting the public from imposition by charlatans and other unlicensed people, who attempt the illegal practice of medicine. This plain duty, I fear, has been neglected. It is a subject to which I would draw your attention, feeling it merits some action on your part. * * * I would recommend the subject to your thoughtful consideration, trusting that some method may be resolved, either by the employment of counsel or otherwise, which may make the enforcement of the medical license act effective. The civil authorities are ready and will try to give the profession its legal rights as well as to protect the citizen from the medical impostor."

The promise of a series of papers, practical as well as scientific, upon the protean phases of tuberculosis warrants the belief that the meetings for the coming year will not be wanting in high scientific value.

Medical Education.

The purpose of a medical school is to thoroughly equip men to practice medicine, and to admit to its halls those only who are qualified, and to reject those who are not.

The last decade has witnessed a marvelous revolution in professional opinion as to what constitutes thorough equipment for the physician, and as to the method of providing such equipment. The developmental periods could be characteristically designated "hearing," "seeing," "doing." The step from didactic lectures to laboratory investigations, clinics and bedside examinations is no small one, and can only be accomplished by increased facilities and a large corps of teachers.

The inaugural of a four years' graded course in medicine for a degree marks the legal recognition by New York of this great advance.

Germany, which has always been foremost in the breadth and thoroughness of her medical teaching, feels that medical advance has outstripped even educational facilities, and at the sixteenth congress for internal medicine, at Wiesbaden, last April, the principal subject for discussion was "Medical Education." Von Ziemssen, who opened the discussion, claimed that there was need of a broadening in medical studies, especially in the direction of practical technical instruction, and advocated increase in the length of the course to ten semesters, practical laboratory work in all the primary subjects, and direct practical work in all diagnostic methods and general therapeutic measures. Quincke, of Kiel, believed that the number of didactic lectures should be much reduced and practical training increased. The consensus of opinion was that practice must take the place of theory, and doing that of hearing and seeing. President Eliot, at the last meeting of the Massachusetts Medical Society, said that he regretted to see that there were still some lecture halls in the Harvard Medical School. To-day in every well-equipped medical school the laboratory holds the place of honor.

The State which has done so much to advance medical education must recognize this change and modify accordingly her examinations. These, too, like the instruction, must be made practical and not theoretical. Anatomy, physiology, chemistry should be regarded only as means, and not as ends. It would be wise either to disregard them altogether in the State examinations, except in their diagnostic features, or to allow students to be examined on the primary subjects at the end of the second year. Senior students, like athletes, should be relieved of all valueless impedimenta, and should not be made pack horses in the race, which often tries to the uttermost their mental strength and physical vigor.

The Discovery of Percussion and Auscultation.

In his presidential address before the American Climatological Association, Dr. Edward O. Otis gives interesting biographical sketches of Auenbrugger and Lænnec (*Boston Medical and Surgical Journal, 22 and 29 September, 1898*). In reviewing the lives of these men the reader is impressed with the different ways in which important discoveries are made, and with the chances attending the discoverer in the uncertain path to fame or obscurity.

Auenbrugger, a quiet, gentle, sympathetic family physician, having no public clinic, observed and reflected upon percussion for seven years before giving his " Novum Inventum " to the world. Of the facts which directed his attention to the acoustics of percussion no record is given, and the discovery was not further utilized until forty-seven years later, when Corvisart translated the " Novum Inventum," unselfishly gave every credit to its author, and revived this most invaluable means of diagnosis.

Lænnec received the suggestion which led to the science of auscultation from the accidental observation of the play of some children in the court of the Louvre. They were amusing themselves by applying the ear to the two extremities of a long beam or piece of wood, and transmitting reciprocally the light sound arising from the blow of the finger against the opposite end. Lænnec reflected upon this, and some days after, on being consulted by a young woman presenting the general symptoms of cardiac disease, with whom percussion was unsatisfactory on account of her stoutness, and her age and sex prohibiting the direct application of the ear to the chest, he took a quire of paper, made a tight roll, and thus invented and used the first stethoscope. In 1818 he communicated his discovery to the Academy of Sciences, and in the succeeding year he published his " Traité l'Auscultation Mèdiate."

Thus is the contrast between the two discoveries complete: Auenbrugger, a quiet, methodical, persevering private practitioner; Lænnec, a brilliant clinician and professor; the former almost permitting his invaluable method to escape into oblivion; the latter, with such untiring industry as to shorten his life, teaching and pursuing the results of his investigations.

That these men were not greatly in advance of their time, indications are not wanting, and no better proof of the universality of science can be adduced than the general activity of its leaders in both the old world and the new during the period of political unrest which closed the eighteenth century.

In 1793, more than twenty years before Lænnec's communication to the Academy of Sciences, Dr. Holyoke, of Massachusetts, published the following case in the " Memoirs of the American Academy of Arts and Sciences: "

" A man about fifty-three or fifty-four years old, of a thin habit of body, laboring under a very bad cough, attended with a hectic fever, profuse sweats, etc., had a large tumor formed upon the upper part of the thorax on the left side, extending from the shoulder all along the lower edge of the clavicle to the *sternum*, about the breadth of a man's hand. This tumor had all the appearance of a large abscess; it was accordingly treated as such, and suppuration seemed to be coming on as usual; but on removing the dressings one day I found the tumor (although the skin remained whole) less prominent to the eye, flabby to the touch, and the pain and inflammation abated. I was now at a loss what to make of the case, as the abscess seemed too far advanced to expect discussion. While I was thinking of the matter the patient asked me 'what could occasion that blubbering noise (as he expressed himself) in the sore.' Upon which, applying my ear near the part where he perceived the noise, I plainly heard a whizzing and, as he termed it, a blubbering noise at every breath, exactly resembling such as arises from the rushing of air through a small orifice. This orifice appeared to be just under the left *clavicle*, but nearer to the shoulder than the *sternum*. Upon viewing the part attentively a small dilatation and contraction was perceptible upon expiration and inspiration; and the part was evidently puffy and flatulent to the touch. At this time the cough was urgent, and the expectoration very copious." * * *

That two men in widely distant places should have stumbled "accidentally" upon auscultation gives more than a hint of the general direction of physical exploration at the time, and in the American observation is a very strong suggestion of the discovery which placed the name of the French physician upon the honor roll of medicine.

Typhoid Fever Spread by Flies.

An important conclusion regarding the agency of insects in the transmission of typhoid has been reached by the commission appointed to inquire into the cause of the camp epidemics. To the *Medical Record* of *24 September, 1898*, we are indebted for the information of the work done by the commission, which consisted of Drs. Lee, Vaughan and Shakespeare.

The camps at Chickamauga, Huntsville, Fernandina and Jacksonville were inspected. It was found that the typhoid fever in each instance was brought by the volunteers from their State camps. The water supply was in most places good, and was not responsible for the spread of the fever. This was effected, in the opinion of the members of the commission, by the flies which swarmed in all the camps, and devoted their attentions impartially and alternately to the fæcal matters in the open and not disinfected sinks and to the hardtack and "sow belly" of the troops.

Scientific Review.

Porencephaly.— Recent contributions upon this condition show that it is neither so rare nor obscure as the absence of literature might indicate. Richter makes a preliminary contribution upon the subject in the *Centralblatt für Nervenheilkunde and Psychiatrie, March, 1898.* A porencephalic brain is one whose cerebral mantle is permeated by a canal. Complete porencephaly reaches from the sub-arachnoid space to the ventricle. To this class belong the porocrania, in which the cavity perforates the skull-cap. The incomplete porencephalies extend from the brain mantle as far as the ependyma, or they extend from the ventricle as far as the cortex, or a short distance from it; their discovery may be made only by serial sections of the affected part, because the convolutions often lie so closely together over a porencephalic defect that a microscopic examination is not sufficient. Finally, there are porencephalic cavities which open neither externally nor internally. The causes of porencephaly are parenchymatous or vascular affections. Richter reviews the literature of the cases illustrating these causes, including those due to traumatic causes at birth or *in utero.* In a case reported by him in Virchow's *Archiv, Bd.* 106, the manner of development of a porencephalic defect is described, showing deformed skulls, with consequent uneven pressure upon the brain, especially of the falx upon the corpus callosum, resulting in necrobiosis within the hemispheres, and the development of connective tissue. The victims are always idiots.

The author reports two cases, from the conditions of which he derives the following conclusions:

1. The preparations show how a compressed corpus callosum,

or at least connective tissue retraction in the direction of its fibrillation, may distort symmetrically the convolutions.

2. The connective tissue contractions split the summits of the convolutions fork-like, and separate them from one another. In this way cavities are formed from without.

3. The connective tissue contractions may separate from one another in their course, and so cause porencephalic cavities.

4. The membranes of the cavities may be traced always to the corpus callosum as connective tissue contractions.

5. The connective tissue contractions correspond with the partially developed connective tissue.

6. These contractions do not necessarily extend into the internal capsule.

7. The cavities frequently extend into the lateral ventricle, as the corpus callosum forms the roof of the ventricle.

8. Porencephalic defects may result either in over-development of the corpus callosum or hydrops, which may easily develop from disturbance of the internal cerebral veins.

9. Porencephalies are infrequent in the frontal lobes.

The writer's reasons for the assumption of central causes are: (1) The strictly symmetrical arrangement of many such defects; (2) the radiation of the connective tissue bands from the corpus callosum to otherwise intact convolutions, so that peripheral disease is excluded; and (3) the complete callosal atrophy.

The peculiarity of many fœtal porencephalies lies in their size. This is due to (1) the histological conditions of the fœtal brain, which permit absorption not to be thought of in adult tissues; (2) the continuance of fœtal life in spite of the defect, in consequence of the maternal nutrition; and (3) the natural asepsis of the maternal uterus.

Richter's contribution is well seconded by a communication by Bourneville and Schwartz to the Anatomical Society at the session of 7 January, 1898 (*Progrès Medicale, 10 and 24 September, 1898*), in which a distinction is drawn between true and false porencephaly, arising respectively from defective development and from pathological processes. Their communication is based upon three cases, all occurring in idiocy, and illustrating unilateral false porencephaly, bilateral false porencephaly, and true porencephaly.

In the first case, that of an epileptic idiot, in which nervous heredity was pronounced on both sides, hemiplegia occurred at three years, following scarlet fever, death resulting from measles shortly after. The cerebral lesions were meningo-encephalitis, with erosion of the cortex, and atrophy of the left hemisphere, which weighed 222 grams less than the right. The peri-Sylvian region was occupied by a deep cavity, taking the place of the convolutions normally occupying this locality. The external pia and the pia of the lateral ventricle were in intimate relation, so that the porencephaly and the ventricle formed two cavities, separated only by the two folds of the pia. The ganglia and convolutions were atrophied.

The second case was one of idiocy, with progressive cachexia; heredity unknown. The lesions were pseudo-cysts of the right and left temporal lobes, with atrophy of the right occipital and frontal lobes. The cyst was completely closed, and there was no trace of communication with the ventricle. A similar lesion existed in the left hemisphere.

The third case was one of complete congenital idiocy in a twin, with hereditary taint. The right hemisphere was abnormally small; the convolutions were atypical. A cavity presented in the middle portion of the Sylvian fissure, which could be traced normally from either end of the defect. The extremities of the convolutions impinged upon the cavity, and at its lower extremity the cavity communicated with the anterior horn of the lateral ventricle.

The congenital defect revealed in the last case shows a difference from the pathological condition of the first two cases, and in the direct communication with the ventricle and the absence of pathological process lies the distinction between true porencephaly and pseudo-porencephaly.

In a brain which has reached normal development, a pathological process, usually a vascular lesion, takes place, as in the first two cases, leaving a cavity in the brain substance, separated from the lateral ventricle by a greater or less thickness of white matter, and containing fluid. This cystic formation may communicate with the lateral ventricle in extreme cases, but differs from true porencephaly in the irregularity of the orifice and of the cavity, and particularly in the fact that the convolutions retain their normal configuration.

In a brain which has been arrested in development, as shown in the last case cited, the cavity has the form of a funnel, with the base externally and the apex toward the ventricle. Its surface is smooth, and it is covered by the pia matter only. The convolutions have a remarkable and characteristic disposition, being directed in a ray-like manner toward the depth of the excavation. The orifice of communication is always regular, even perfectly round, forming what is called the "porus." The "porus" is always situated at the deepest part of the funnel. Around the excavation are nearly always found other anomalies of development.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D.

Medical Expert Testimony — A Suggestion. — The ANNALS for October contains an interesting article on "Medical and Other Experts," by St. Clair McKelway, LL. D., Regent of the University of the State of New York. It is an able contribution toward the unraveling of an intricate tangle, and contains suggestions as practical and reasonable as any heretofore put forth. Notwithstanding the vast amount of literature on medical expert testimony written by able lawyers and physicians, we are far from a solution, especially that solution which in practice deals with all parties concerned with equity, and any solution which falls a line short of equity cannot be accepted.

Nothing could be gained by discussing the question at great length, and we cannot do better than summarize the principal points of Dr. McKelway's paper which pertain to the solution of the problem. He says: "that the partisanship of the employment of experts should cease; that the expert should be summoned by the court alone, and not by the attorney of either side under color of the court's authority; that as many experts should be judicially summoned as the judge thinks the rights of all interests in the case will require; that, if necessary, a list of experts should be nominated to the judge by each side of the case, from which list the judge should select those whom he thinks could best be chosen; that the propositions submitted to these experts and their replies should be in writing; that the investigation of the questions upon which the views of the experts are required should be conducted by commission, not in open court; that the judge himself should be the final authority to place the net truth, gathered from all the expert testimony, before the jury with the same precision, authority and impartiality as he expounds to them the law; that the source of remuneration should be the public treasury; and that the measurer of the value of the time, labor, knowledge and reputation of the expert witness should be the judge."

This summary indicates, according to Dr. McKelway's ideas, the most direct way of reducing the present scandal of expert testimony, and "if the change can be made by statute, it should be made in that way. If constitutional action is required, that action should be had."

Running through the July numbers of the *Philadelphia Polyclinic* is a short series of papers on "Expert Testimony," read before the "Philadelphia County Medical Society," with a full report of the discussions following them. One paper was by Dallas Sanders, Esq., of the Philadelphia bar; another by Dr. John B. Chapin, a noted alienist, superintendent of the Pennsylvania Hospital for the Insane. Dr. Chapin handled the subject in a masterly manner, showing long experience and careful study and thought. He dealt almost exclusively with the position of the alienist in relation to expert testimony, not bearing upon the expert chemist or pathologist, or the general physician or surgeon as an expert witness. We will quote two strong paragraphs which are relative to the purpose of this article, though the whole paper is worthy of very careful consideration:

"Among the schemes intended to elevate the standard of expert testimony, usually originating among physicians or in medical societies, may be named the creation of a board of State experts, or experts for judicial districts, which would embrace physicians, chemists, veterinarians, and a larger number of those devoted to specialties. Perhaps they might be appointed by the judges, or by the Governor, as other commissions and boards of examiners are selected. This proposition is in line with others such as have found favor (though not yet adopted) in the neighboring State of New York and other States, to create commissions to examine persons that they might be licensed as undertakers, barbers, horse-shoers, etc."

The other quotation shows that eighteen years ago Dr. Chapin suggested a plan of reform, which was well received at the time, and which has again been brought forth at a very recent time by another writer, though not an alienist — Dr. McKelway:

"In 1880 the writer submitted a proposition that he believed might be properly accepted by counsel in a large number of cases where expert testimony is desired and necessary, viz., that all the counsel concerned, waiving all rights, would each present the names of an agreed number of experts, from whom the trial judge would name three and fix their compensation or fee. Although this proposition received the favorable commendation of judges and members of the bar as fair, and calculated to secure the independence of the experts, and to remove even the suspicion of a bias, nothing came of it, as it was said it would not receive the assent of counsel in every case, and could not be made binding. Probably it seemed too complicated."

It is here that a suggestion would not be out of place, especially if it pointed out a way of inaugurating that reform, the principles of which have been stated by Dr. McKelway and Dr. Chapin. During the last session of the Legislature of the State of New York there was presented in the Assembly a bill "providing for the appointment and examination of medical expert witnesses in certain cases and regulating their compensation." We do not know, positively, the origin of this bill, but we do know that it was introduced early in the session, was referred to the Committee on Codes, and was not heard of after that. It contained some good and some questionable provisions, but had it been brought before its committee in hearing it would have been discussed and its defects shown, and some knowledge derived as to the possibility of obtaining reform by legislative enactment. Now, we know of no reason, though many may exist, why a committee should not be appointed from the State Medical Society to draw up, in conference with some willing members of the legal profession, a bill which will govern the appointment and examination of medical expert witnesses; this committee from the State Society to see that the bill is presented to the Legislature; that it be given hearings before the committee to which it is referred, and thoroughly and generally discussed. The majority of the members of the committee to which this bill would be referred (that on codes or judiciary) would be lawyers, men quite as much interested in this question as doctors. This procedure would lead to some definite result, and at least open up a field of possibilities which has so far been closed. In all the great mass of writing pertaining to this question little is found concerning legislative enactment as a means of mitigating the painful condition.

Undoubtedly the rank and file of the medical profession would be pleased to see the representative body of physicians of the State place this question before the Legislature; they would like to see the first step taken in the direction of a reform.

Obituary.

CHARLES McCULLOCH, M. D.

Dr. McCulloch died at his home in Gloversville, October 15, 1898. He had been in failing health for nearly two years, but was confined to his bed for only four days, the end coming suddenly. He was born in Coeymans, in 1846. When 18 he received a second lieutenant's commission in the home guards from Governor Fenton. After the war he taught in Albany and Schoharie county schools. In 1869 he married Miss Antoinette Terwilliger, at Voorheesville. In 1877 he graduated from the Albany Medical College, and later became a member of the Bellevue Hospital medical staff, in New York.

On returning from New York he settled in Central Bridge, Schoharie county, and remained there until 1893, when he removed to Gloversville. He was always a Republican, and in 1886, while a resident of Schoharie county, was nominated for member of assembly. In 1891 he took a post-graduate medical course in New York. Owing to ill health he gave up his practice in May last, and was succeeded by his son, Dr. William C. McCulloch, a graduate of the Albany Medical College of the class of 1897. Dr. McCulloch was a member of the Nathan Littauer

Hospital medical board, and was also a member of the Eccentric Club and Odd Fellows and Masonic lodges of Gloversville. He was connected with the Presbyterian church. He is survived by his wife and four children, Dr. William C., Stephen, Earl C. and Charles R. McCulloch, also by one brother, Conrad R. McCulloch, of Ravena, Albany county, and two sisters, Mrs. Margaret L. Mead, of Albany, and Miss Catharine A. McCulloch, of Voorheesville.

Medical News.

SAMARITAN HOSPITAL, TROY, N. Y. — A medical and surgical inspection of the Samaritan Hospital, Troy, N. Y., took place on Saturday, October 22, 1898. This, one of the most complete and modern hospitals, is situated on the east side of Eighth street, between Hutton and Hoosick streets, and is comprised of four separate buildings — the main building with wing attached on the south, the Price memorial for infectious diseases, the pathological building and the power house.

The buildings are of pressed brick, and with the exception of the infectious building are painted a mild shade of light olive or yellow. The main building is 50 x 90 feet, three stories in height, with basement, attached to which and slightly to the rear is the south wing, 28 x 40 feet, and of the same height. The power house is in the rear of the south wing, and is two stories high. The pathological building, which is separated from the north end of the main building by a driveway, is twenty-five feet square and two stories high.

The building for infectious diseases is on the southeast part of the premises. It is a substantial building of pressed brick, two stories in height, and 36 x 70 feet in dimensions.

Although it is by no means the most expensive creation of its kind, nor the largest, yet the perfection of its details and appointments make it one of the best hospitals. It is particularly well provided in its operating department, in the possession of its infectious building, the disinfecting plant and its provisions for heating and ventilation, and every inch of space is profitably used.

The main building, three stories in height, consists of five large, handsome wards, well lighted by many windows on three sides, and twenty neat and attractive private rooms. On each floor there is a number of lavatories, bathrooms and linen closets. The woodwork throughout painted a light olive green, the floors of rock maple and the uniformly white walls of patent plaster on metal lathing give the visitor a most pleasing impression of cleanliness and abundance of light and air.

On the third floor five rooms in the south wing are devoted to the operating department. On the right of the hall is the dressing or coat room, and opposite is the washroom, with ceramic tile floor and Tennessee marble wainscoting. Adjacent to it is the sterilizing room, with similar floor and wainscoting and equipped with the latest apparatus for sterilizing water, dressings and instruments. This room opens into the operating room, which is wainscoted with Tennessee marble, the floor being of ceramic tile. Glass and metal cases contain surgeons' instruments and dressings. Three tiers of seats of Tennessee marble on the west side provide room for spectators of operations. Ample light is aflorded through windows and skylight, and fixtures for gas and electric light over the operating table provide for operations at night. Across the hall is the etherizing room where patients are given ether or other anæsthetics.

The interior of the building for infectious diseases is not yet finished. It will be a commodious structure with five entrances, each leading to a department which is completely separated from the others. The interior will be finished, as in the main building, with maple floors, pine woodwork painted, with white walls. It will allow the complete isolation of persons suffering from contagious diseases.

In the upper story of the power house is the disinfecting plant, which may be used not only by the hospital but by the public. The materials, such as bedding, clothing, carpets, etc., are brought into the room on the east and placed in a horizontal cylinder, which extends from the east to the west room, being about four feet in diameter. The moist heat (steam) is the process used for disinfecting, and at the conclusion of the process the material is discharged from the cylinder into the west room which has no other connection with the east room. In this room also is an improved Jewett filter, and all water used in the hospital is carefully and completely filtered.

The heating apparatus is modern and consists of the warming of air over steam in coils. A large Sturtevant fan draws the cold air over the coils and forces the heated air through the building. The heated air enters the rooms through registers in the ceilings. The vent registers are in the floors. The capacity of the heating flues are slightly in excess of the vents, which causes a continuous current. The air is thus changed in each room from two to four times each hour. It is the most improved and complete system of heating and ventilation. There are also a few steam radiators in the building.

The pathological department is in a separate building north of the main structure and comprises the entire two-story brick building. Here autopsies will be held, and there is a place for the reception of bodies.

The architects of the reconstruction of the main building and wing are Cady, Berg & See of New York. William A. Sweet of Troy is the architect for the Price memorial building and was superintendent of construction on the main building.

The medical and surgical staff includes Drs. E. D. Ferguson, H. C. Gordinier, J. P. Marsh, W. W. Seymour and F. A. Smith.

Dr. Edward W. Becker is interne and Miss Katharine M. Pierce is superintendent. A complete corps of nurses is now in attendance.

The medical staff are to be congratulated upon the creation of such a complete and handsome hospital, which presents boundless opportunities for the relief of suffering and the advancement of medical science, and the directors and women managers will always have with them the thought that their efforts have furnished the means of giving health to the sick, of mitigating the tortures of disease and of preventing the untold suffering of contagious disease. Many physicians from Albany took advantage of the opportunity to admire this handsome hospital and to wish their confreres God-speed in this, the noblest work of man.

ALBANY COUNTY MEDICAL SOCIETY. — The semi-annual meeting was held Tuesday evening, October 11, 1898, the President, Dr. J. L. Archambault, in the chair. Dr. Ullman delivered the address of the Vice-President.

Attention was called to abuses of the Medical Practice Law, and a general discussion upon this subject followed.

The following named new members were elected: Drs. George Blumer, August Jerome Lartigau, A. L. George, Albany; Joseph C. Daunais, Edwin M. Bell, John Archibald, Cohoes; William E. Swan, Spencer Lyman Dawes, Albany; Frederick Sauerbrie, New Salem; Martin Reid, Clarksville.

Upon adjournment an informal luncheon was served in the College Library.

THE AMERICAN MICROSCOPICAL SOCIETY. — At its recent annual session, this society elected the following officers for the ensuing year: President, Dr. William C. Krauss, of Buffalo; first vice-president, Professor A. M. Bleile, of Columbus, O.; second vice-president, Dr. G. C. Huber, of Ann Arbor, Mich.; secretary, Professor Henry D. Ward, of Lincoln, Neb.; treasurer, Magnus Pflaum, of Pittsburg; executive committee, Professor S. H. Gage, of Ithaca, Dr. A. Clifford Mercer, of Syracuse, and Dr. V. A. Moore, of Ithaca.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. — At the meeting recently held at Nashville the following named officers were elected: President, Dr. Duncan Eve, Nashville, Tenn.; First Vice-President, Dr. A. J. Ochsner, Chicago, Ill.; Second Vice-President, Dr. J. C. Morfit, St. Louis, Mo.; Secretary, Dr. Henry E. Tuley, Louisville, Ky. (111 West Kentucky street); Treasurer, Dr. Dudley S. Reynolds, Louisville, Ky. Chicago was appointed for the next place of meeting, the chairmanship of the Committee of Arrangements being assigned to Dr. Harold N. Moyer.

THE COHOES HOSPITAL ASSOCIATION. — Dr. Pierce J. O'Brien (A. M. C., 1898) has been appointed house physician of the new hospital. Dr. O'Brien, immediately after graduation, accompanied the Twelfth Separate Company of Troy to Camp Black. He was mustered into the United States service as a private in Company C, 2d Regiment, N. Y. Volunteers, and was detached at Chickamauga to act as assistant to the surgeons at the regimental hospitals.

MARRIED: ANDREWS — MARILL. — At Poughkeepsie, N. Y., on Wednesday, September 28, 1898, Dr. Robert W. Andrews (A. M. C., 1898) and Miss Minnie Marill. Dr. Andrews had been on duty at Camp Thomas, Chickamauga, and after the wedding left, under orders, for Ponce, Porto Rico.

SANFORD — HAMLIN. — At Albany, N. Y., on Wednesday, October 19, 1898, Dr. Waldo H. Sanford (A. M. C., 1896) and Miss Hannah Hamlin. Dr. and Mrs. Sanford will reside at Brewsters, N. Y., where Dr. Sanford has become well established in practice.

Book Reviews.

Transactions of the Medical Society of the State of New York for 1898. Published by the Society. Pp. 512.

This handsome volume of transactions contains forty-four papers, a creditable showing in scientific work, but much too many for careful consideration at the meetings of the society. There was one general discussion upon "The Management of Hypertrophy of the Prostate Gland and its Complications," in which Drs. Bangs, Meyer, Pilcher and Keyes took part.

The papers upon the use of the X rays in medicine and surgery by Drs. Williams and Fisk are handsomely illustrated and show how rapidly has been the growth of this latest child of medicine.

A short but valuable paper on anæmia, by the late Dr. R. C. M. Page, is a reminder of the society's loss.

Contrary to custom no physician from outside of the State, with the exception of Dr. F. H. Williams, of Boston, was invited to present a paper.

It is probably a good stimulus to discussions to have one from an adjoining State take part in the meetings.

Among the memorials are one of Benjamin F. Sherman, M. D., and one of Joseph Lewi, M. D., both sincere, sympathetic and thoroughly appreciative.

The secretary and publication committee are to be congratulated on the creditable appearance of the volume.

The Ohio State Medical Society; Transactions of the Fifty-Third Annual Meeting, Held at Columbus, Ohio, May 4, 5, 6, 1898. Edited by P. MAXWELL FOSHAY, M. D., Cleveland, Ohio. Cleveland, Ohio: J. B. Savage Press, 1898.

This volume of transactions of the Ohio State Society is a credit to both the society and its editor, the contributions showing throughout a high order of merit, and their classification and arrangement presenting a feature not always found in publications of this character. There are fifteen chapters, including the official announcements of the society and the work of the meeting in its various sections.

The society was fortunate in the contributions of Drs. Nicholas Senn and H. A. Hare. Dr. Senn was called to the front by the summons to war, but his exhaustive paper on Intestinal Tuberculosis is included in the transactions. Dr. Hare presented a communication on therapeutics which was eminently practical. In congratulating the society upon this excellent representation of its guests, it is not the intention to institute comparison with the work done by its members, which was progressive, vigorous and well-sustained.

Current Medical Literature.

The Bacteria of the Vagina and their Practical Significance. — Williams, in the *American Journal of Obstetrics, October, 1898,* presents a valuable paper with most complete bacteriological examinations upon this subject. From 1887, when Gönner wrote his first paper on this subject, obstetricians have been divided as to whether the vaginal secretion of pregnant women contained the pathogenic organisms usually found in puerperal infection, and therefore if autoinfection was possible and prophylactic antiseptic vaginal douches were necessary.

The results from two classes of observers deemed equally capable have been absolutely contradictory. The explanation apparently seemed clear when Döderlein, 1892, stated he was able to distinguish two varieties of vaginal secretion — normal and abnormal. These varieties were differentiated by different characteristics, but especially by the absence or presence of pyogenic organisms. As a result he claimed there was no possibility of autoinfection in the cases with normal secretion, but that it might occur when it was abnormal. In 1894 Krönig, however, demonstrated that the vaginal secretion, no matter what its character, possessed a marked bactericidal action upon pathogenic organisms and that the vagina of a pregnant woman was aseptic. He also demonstrated that antiseptic douches only weakened or destroyed the normal antiseptic qualities of the secretion.

Other competent observers found an exactly opposite condition. Krönig and Menge in further investigation, reported in 1897, reaffirm the previous statements as to the absence of pyogenic bacteria from the vaginal secretion. Krönig claimed that the contradictory results obtained were due to contamination from faulty technique, bacteria being carried in from the vulva.

Williams, though he had previously found pyogenic organisms, conducted a second series of investigations much more carefully, and as a result came to the same opinion as advanced by Krönig.

His conclusions are:

1. The vaginal secretion of pregnant women does not contain the usual pyogenic cocci.

2. The contradictory results obtained are due to the technique by which the secretion is obtained.

3. Autoinfection is impossible when found in the puerperal uterus; they have been introduced from without.

4. The gonococcus is occasionally found and during the puerperium may extend into the uterus and tubes.

5. It is possible, but not yet demonstrated, in very rare instances that the vagina may contain bacteria which may give rise to sapremia and putrefactive endometritis by autoinfection.

6. Puerperal infection is always due to infection from without and is usually due to neglect of aseptic precautions on the part of the physician and nurse.

7. Puerperal infection is to be avoided by limiting vaginal examinations as much as possible and cultivating external palpation. When vaginal examinations are to be made the external gantalia should be carefully disinfected and the hands made aseptic. Vaginal douches are not necessary and are probably harmful.

Some Observations on Brain Anatomy and Brain Tumors. — Dr. William C. Krauss, of Buffalo, read a paper at the 92d annual meeting of the Medical Society of the State of New York, Albany, Jan. 25, 1898, with the above title. He called attention, (1) to the difficulty in remembering the gross anatomy of the brain, and (2) to the almost universal presence of optic neuritis in cases of brain tumor. He attempted to overcome the difficulty in regard to the anatomy of the brain by formulating the following rules, which are somewhat unique and original, and at the same time easily remembered.

Rule of TWO. 1. The nerve centers are divided into two great divisions, (1) encephalon, (2) myelon. 2. The encephalon is divided into two subdivisions, (1) cerebrum, (2) cerebellum. 3. The cerebrum, cerebellum and myelon are divided into two hemispheres each, (1) right, (2) left. 4. The encephalon is indented by two great fissures, (1) longitudinal, (2) transverse. 5. Into these two great fissures there dip two folds of the dura, (1) falx cerebri, (2) tentorium cerebelli. 6. There are two varieties of brain matter, (1) white, (2) gray.

Rule of THREE. 1. There are three layers of membranes surrounding the brain, (1) dura, (2) arachnoid, (3) pia. 2. Each hemisphere is indented by three major fissures, (1) sylvian, (2) rolandic or central, (3) parieto-occipital. 3. Three lobes, frontal, temporal and occipital, on their convex surface are divided into three convolutions each, superior, middle and inferior, or 1st, 2d and 3d. 4. There are three pairs of basal ganglia, (1) striata, (2) thalami, (3) quadrigemina. 5. The hemispheres of the brain are connected by three commissures, (1) anterior, (2) medi, (3) post-commissure. 6. The cerebellum consists of three portions, (1) right, (2) left hemisphere, (3) vermes. 7. There are three pairs of cerebellar peduncles, (1) superior, (2) middle, (3) inferior. 8. The number of pairs of cranial nerves, in the classifications of Willis and Sommering, can be determined by adding three to the number of letters in each name: that of Willis making nine, and that of Sommering making 12 (or the name containing the more letters has the larger number of pairs of nerves, and vice versa). 9. The cortex of the cerebellum is divided into three layers of cells, (1) granular, (2) Purkinje's cells, (3) a molecular layer.

Rule of FIVE. 1. Each hemisphere is divided externally into five lobes, of which four are visible, (1) frontal, (2) parietal, (3) temporal, (4) occipital, and one invisible, (5) insula (Isle of Reil). Roughly speaking, the visible lobes correspond to the bones of the cranium; that is, the frontal lobe is underneath the frontal bone, the parietal lobe beneath the parietal bone, etc. 2. The brain contains five ventricles, of which four are visible — the right and left, or 1st and 2d, the 3d and the 4th; and one invisible, the 5th, or pseudo-ventricle. 3. The cortex of the brain contains five distinct layers of ganglion cells.

Studying carefully 100 cases of brain tumor in which an ophthalmoscopic examination had been made for the presence or absence of choked disc (optic neuritis) Dr. Krauss announced the following conclusions:

1. Optic neuritis is present in about 90% of all cases of brain tumor.

2. It is more often present in cerebral than in cerebellar cases.

3. The location of the tumor exerts little influence over the appearance of the papillitis.

4. The size and nature of the tumor exerts but little influence over the production of the papillitis.

5. Tumors of slow growth are less inclined to be accompanied with optic neuritis than those of rapid growth.

6. It is probable that unilateral choked disc is indicative of disease in the hemisphere corresponding to the eye involved.

7. It is doubtful whether increased intracranial pressure is solely and alone responsible for the production of an optic neuritis in cases of brain tumor. — *The Philadelphia Medical Journal.*

Treatment of Scrofulous Lymph Glands. — Hammerschlag treats scrophulous lymph glands, especially of the neck, if they show no signs of softening, with injections of 5 per cent. iodoform in glycerine in doses of 1–2 c. c. These injections are repeated every week or two, and the length of treatment averages three months. — *Deut. Med. Wochenschrift.*

Anæmia. — Abelmann writes a review (*St. Petersburger Med. Woch. No. 36, 1898*) of the fasciculus upon this subject by Ehrlich and Lazarus in Nothnagel's "Specielle Pathologie und Therapie."

Ehrlich gives here his new method for the determination of the whole amount of blood in the organism, by ascertaining the degree of attenuation which the specific antagonists of the bacterial poison will permit in the blood current. The simple enumeration of the blood cells in anæmias the writers declare is insufficient, since the sizes of the individual cells are so unequal. They attach little clinical value to the determination of the alkalinity, but attribute greater significance to the rapidity with which coagulation takes place, and the completeness with which the serum separates. Ehrlich regards poikilocytosis as a shift of nature to protect against the bad results of diminution in the number of corpuscles, inasmuch as the superficial area of the whole number of blood cells is thereby increased. For the same reason the appearance of megaloblasts in the blood is to be taken as an effort at regeneration. The blood cells may be classified as (1) lymphocytes, (2) larger mononuclear leucocytes, (3) transitional forms, (4) polynuclear leucocytes, (5) eosinophile cells, (6) mast cells (basophile granulations). In disease, may also appear (7) Ehrlich's myelocytes, that is, mononuclear cells with neutrophile granulations, (8) mononuclear cells (eosinophiles), (9) small neutrophile pseudolymphocytes, and (10) irritation forms. Ehrlich differentiates between an active and a passive leucocytosis. The latter includes the different forms of lymphocytosis; active movements are not characteristic of the lymphocytes; where they are increased in the blood they arise from the increased circulation in the hyperplastic glands. Active leucocytosis arises from increase in the cell forms, which are set loose in the blood current through their own movement from chemotactic irritation. Ehrlich recognizes two forms of leukæmia: lymphatic and myelogenous. The spleen plays an altogether too passive role to permit of a special form. The origin of leukæmia is to be sought in a specific toxic agent.

The Balantidium Coli as a Cause of Chronic Diarrhœa. — Dehio has studied a series of cases in which the ætiological role of this parasite in diarrhœal conditions seemed plain (*St. Petersb. Med. Woch., No. 36, 1898*). In the stools of a patient who had suffered for years with diarrhœa, abdominal pain and tenesmus, accompanied by great emaciation, anæmia and exhaustion, and terminating fatally, were found eggs of the bothriocephalus and numerous living balantidia. The autopsy showed a chronic catarrhal condition of the great intestine with necrosis of the mucous membrane. The author finds 61 published cases, including his own, 28 of which occurred in Russia. For the microscopic diagnosis, the procedure is exceedingly simple. A drop or a small shred of mucus is taken from a fresh stool, or by the use of a spoon-shaped instrument is removed from the bowel, and examined with moderately high power. The balantidia are recognized by the characteristic movement of their glittering integument, and the activity with which they move about in the enveloping medium.

The Modern Pathology and Treatment of Migraine. — Stekel, in the *Wiener Med. Wochenscrift, 1898, Nos. 46 and 47*, states that most of the cases of migraine are due to intoxication and makes the following ætiological division:

A. The severe form allied to epilepsy, the resultant of a neuropathic tendency.

B. Migraine due to intoxicants:

- (1) Intoxicants from without.
    - (*a*) Metallic poisons.
    - (*b*) Alcohol.
    - (*c*) Excessive flesh diet.
    - (*d*) Other injurious food.
- (2) Auto-intoxicants.
    - (*a*) From different organs.
      Aromatic substances, alkaloids, etc.
    - (*b*) Exhaustion, migraine.
    - (*c*) Uric acid diathesis, xanthin products.

Therapeutically the indications are to induce metamorphosis and to increase diuresis and diaphoresis. Quinine, antipyrin, antifebrin and phenacetin are contra-indicated as they retard metamorphosis. The treatment which best meets all the indications is steam baths or prolonged hot packs followed by cold rubbing. Suitable diet should be prescribed according to the form of the attack.

Tetany. — Several contributions upon tetany appear in *The Lancet* of September 24, 1898.

Under the title "Gastric Tetany," E. F. Trevelyan discusses the relations indicated in the title of his paper, based upon several cases and the lierature of the subject. In his first case duodenal cancer with gastric dilatation were found. He sees no advantage in the present state of knowledge in attempting to differentiate between gastric tetany and gastric dilatation with tetanoid spasm. The reason that dyspeptic symptoms have usually been noted for many years before the appearance of the spasm of tetany, is that the most frequent cause of gastrectasis complicated by tetany is cicatrization of an ulcer. Duodenal ulcers have also been found, and renal disease. Of the three or four theories put forward to explain the origin of gastric tetany, the auto-intoxication theory has found the widest acceptance. The prognosis is very serious; nearly seventy-five per cent. of the cases die. As to treatment, even with the unfavorable prognosis, some relief may be given. In some cases, notably one by Blazicek, the fatal issue was warded off for a time by systematically washing out the stomach. If the tetany ceases and the general condition of the patient permits, an attempt should, perhaps, be made to do away with the gastric retention by pyloroplasty, gastro-enterostomy, or pylorectomy.

In a case of tetany with dilatation of the stomach, reported in the same journal by J. S. McKendrick, the necropsy revealed gastric dilatation, cicatricial contraction of the pyloric end of the stomach, and marked enlargement and caseation of the glands around, with intimate adhesion to the wall of the stomach and cicatrised area.

The Lancet comments upon the subject editorially, emphasizing the great probability of the toxic origin, and the necessity of examination of the stomach contents. In cases of gastrectasia in which this complication occurs, stomach washing must be resorted to at once. If the toxic theory be the correct explanation, it might be thought, considering the large number of cases of gastric dilatation, and the fewness of the severe and fatal cases of tetany which complicates them, that cases of less severe intoxication should not seldom occur. Cases of slight and transient spasm, of cramps, of temporarily deranged sensation may arise and be so trivial as to escape the observation of the medical adviser or be disregarded by the patient himself. If they so occur their existence would go far to confirm the opinion of the toxic origin of tetany, which is not gainsaid by the conditions of its occurrence in children, in nursing women or after thyroidectomy.

Laryngitis Rheumatica Circumscripta or Nodosa. — Ucherman, in the *Centralblatt für innere Medicin, 1898, No. 39,* describes a form of laryngitis not previously recognized.

It is an acute primary laryngitis which does not complicate an acute rheumatism, nor does it follow at the end of this disorder, but depends upon a rheumatic diathesis and is characterized by a hard, sensitive infiltration not accompanied by catarrh and quickly disappearing upon the administration of salicylic acid. He had noted this condition in four cases, two of whom had suffered from articular rheumatism and the other two had muscular pains and neuralgias dependent upon changes in the weather. It is not characterized by fever. This is to be differentiated from the inflammation of the crico-arytenoid articulation, which is accompanied by marked œdema, is more diffuse and whose infiltration has not a hard, sharp contour, which also can affect the aryepiglottic folds without interfering with the movement of the vocal cords. The disease which might be most easily mistaken for this affection is the gummatous infiltration of the laryngeal introitus. The salicylates affect the rheumatic affection, but not the gummatous, which is improved by the iodid of potash.

The following is a short schema of the rheumatic laryngeal affections:

1. Rheumatic laryngitis complicating acute general rheumatism in the form of an inflammation of the cryco-arytenoid articulation.

2. Primary laryngeal rheumatic affections in people who are predisposed.

(*a*) A simple laryngitis with great sensitiveness and injection, but with little swelling of the mucous membrane and no catarrh (Laryngitis rheumatica simplex of Ingals, Thorner).

(*b*) The laryngitis with marked nodular infiltration (Laryngitis rheumatic nodosa of Uchermann).

(*c*) Largynitis rheumatica œdematosa. This form can be differentiated from the common infectious œdema only by the history and the rapid action of anti-rheumatic remedies.

The same forms appear also in the pharynx.

Practical Therapeutics.

Local Treatment of Syphilis of the Mouth and Pharynx. — Kirstein in the *Therapeutische Monatshefte, May, 1898,* states that no treatment has given such satisfactory results in these cases as penciling with a five per cent. aqueous solution of bichloride.

Quinine in an Agreeable Form. — *The Boston Medical and Surgical Journal* recommends the following method of administering quinine as both pleasant and more readily absorbed:

℞	Quinin sulph.,	4.
	Acidi citrici,	10.
	Syrupi simpl.,	
	Syrupi cort.-aurant, āā	1.
	Aquæ dest. q. s. ad.	20.

M. Sig. — Ten drops in a wine glass of water, to which has been added five grains of bicarbonate of soda.

Treatment of Trigeminal Neuralgia. — Krause (*Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie, Bd. II, Hft. 5*) had brilliant results in three severe cases by the administration of aconitinum nitricum (Merck). He prescribed one drop of one per cent. solution every hour for ten doses and increased the dose one drop every day until on the sixth day, sixty drops were taken. If no signs of poisoning appear the dose can be raised to eight drops and kept at that for several weeks. If symptoms of poisoning appear it must be discontinued or the quantity diminished.

He also praises Dana's treatment, the daily subcutaneous injections of strychnine in gradually increasing doses, grain $\frac{1}{30}$ to grain $\frac{1}{6}$. The largest dose can be continued eight to ten days, then gradually diminished until at the end of five to six weeks the initial dose is reached. Then the patient should receive potassium iodid in increasing doses, gr. v to xviii three times a day, and with it the tincture of iron in large quantities. During the treatment the patient should be confined to bed and should receive a light diet and diuretics. After four weeks he is allowed to go out daily for two hours, and after six weeks he may resume his occupation.

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For the ANNALS.

SOME NOTES ABOUT THE CITY OF OSAKA, JAPAN; ITS SANITATION, HOSPITALS, PRACTITIONERS AND DISEASES.

BY HENRY LANING, M. D.,

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The city of Osaka is situated on the banks of the Yodo river, near its entrance into Osaka bay, at the head of the inland sea. Next to the capital the largest city in the empire, it is the commercial metropolis and chief manufacturing town. The river being navigable only to coasting steamers and other vessels of light draught, it has been dependent upon the port at Kobe, twenty miles distant, for foreign shipping facilities; but a harbor at the mouth of the river which will be accessible to ocean-going steamers is now in course of construction — to be completed in eight years at a cost of over 21,000,000 yen — which will make this a principal shipping port; and its location having natural advantages of defense, it being a chief railway center and military rendezvous, it may become also a first-class naval basis. Along the eastern confines of the city is a plateau, on which is situated what was once the strongest fortress in the empire — the Osaka Castle — which was built in the seventeenth century, when the city was the military capital, and which was the last stronghold of the Tycoon to surrender to the imperial forces at the time of the restoration of the Emperor to power, in 1868. Here are now located extensive military barracks and parade grounds. Near by is the arsenal, and on the opposite bank of the river the imperial mint. Aside from this slightly elevated ridge, the land upon which the city is built is low and flat, and so intersected by water-courses — natural and artificial — that the place has been styled by some the Venice of the East. There is little else, however, to sustain the comparison. The rivers and canals are crossed by about three hundred bridges, and over sixteen thousand *jinrikisha* ply the numerous streets at full man-power speed. Freight carts are drawn by coolies, and wheelmen and men on horseback, with *betto* ahead to clear the way, are occasionally seen. Most of the streets are too narrow to admit of horse-carriage driving. They are swept daily, and in dry weather frequently watered. They are the playground for young children, and some are thronged with pedestrians, but collisions resulting in injuries requiring surgical aid are rare. The town is compactly built over an area of eight square miles. It is lighted by electricity and has telephonic accommodations. On account of greater difficulties to be overcome, it is behind some other Japanese cities in the introduction of electric tramways. The buildings are tile-roofed, and, excepting the public buildings, temples, manufactories, warehouses and an increasing number of office buildings and stores in foreign style, the houses are mostly unpainted wood-and-plaster structures of one-and-a-half stories, adjoined to each other at the sides, and with a miniature landscape garden in the rear or in a court. There is one public park, a small one recently laid out, and there are places of open-air resort in the suburbs, but the rivers afford the chief breathing space, and in summer are largely resorted to in pleasure boats.

Clear, bright weather prevails as a rule during most of the year, though the air is sometimes laden with smoke from more than a thousand smoke-stacks of the cotton-spinning mills and other manufacturing establishments which have been started during the last few years. In winter the temperature seldom reaches freezing point, but the humid atmosphere and cold winds from snow-capped mountains necessitate the wearing of heavy clothing. The annual rainfall averages about fifty inches. There is usually a rainy season in the early summer, followed by continuously hot weather till the middle of September. The thermometer in the shade seldom rises above 92° F., but the heat is oppressive, and the death-rate becomes higher, particularly among children, from intestinal disorders and meningitis.

The sanitary condition of the town has been much improved of late. Four years ago the construction of a new system of sewers was begun, and the work was completed last November, at a cost of 789,369 yen. No portion of the night-soil is disposed of as sewage. It is used as a fertilizer on the neighboring fields of rice, cotton, barley, rape and various kinds of vegetables. Cesspools and stagnant moats and gutters are far less common than formerly, yet there is room for improvement, especially in the crowded poorer quarters, back alleys and lanes.

The water supply for all purposes has been from wells or the rivers and canals. Cold water not being generally used as a beverage may have had some effect in lessening the amount of sickness from water-borne diseases, but the need of a purer water supply has long been recognized, and the devastating ravages of recent cholera epidemics has demonstrated its urgent necessity, and doubtless hastened measures for securing it. In October, 1895, the introduction of city water-works was brought to completion. It took three years and three months to carry out the undertaking, and an expenditure of 2,563,270 yen. The water supplied is from the Yodo river, which is the outlet of Lake Biwa, thirty miles distant. From the intake above the confines of the city it is conducted to extensive sand filter-beds. After filtration it is pumped by steam power to a reservoir situated on the highest point within the grounds of the Osaka Castle, from which it is distributed throughout the city at a pressure sufficient to force a fire stream the height of the buildings. Provision is also made for pumping from the engine house directly into the mains, if need be. The distributing pipes are of iron — English manufacture — and the service pipes in buildings of lead. The population of the city — supplied with water from the works — is 600,901. The number of deaths therein from typhoid fever fell from an average of 136¼ yearly for the last four years previous to the completion of the water-works to 76 the year following and 22 last year. The average annual number of deaths from dysentery for the four years previous was 634½; the annual average for the two years following was 110½.

During the last twenty years there have been several severe epidemics of cholera, introduced from Chinese ports, each lasting two summers — or a part of two summers — in succession; and for a number of years past a few sporadic cases have been reported every summer. The last epidemic — comparatively a very light one — was in 1895, with a mortality of 2,238 during the summer. The year following twenty-two deaths only were reported; and last year thirteen. Deaths from some other contagious diseases were as follows:*

	1892	1893	1894	1895	1896	1897
Diphtheria	132	110	70	52	56	140
Small-pox	169	590	5	2	48	700
Typhus	1	5	1	0	1	0

According to the statistics the total death-rate is not high. Those for last year have not yet been made out. The total number of deaths the year before was 11,103, showing a death-rate of 18.48 per thousand of population. For the last four years before that it was somewhat higher, ranging from 19 to 23. Reliable statistics for early years are not at hand.

The administration of affairs relating to the health of the city is in the hands of the Sanitary Bureau, a branch of the Central Sanitary Bureau in Tokyo. It is composed of a Chief Medical Officer and subordinates appointed by the Governor of the city. It has a central office on the premises of the City Hall, and a branch office at each of the police stations. A register of contagious diseases — cases and deaths — is kept; a chemical and microscopic examination of the water supply is made daily; rules regarding the sanitary condition of dairies and the milk and beef supply are enforced. In times of epidemic disease emergency hospitals are established, and local quarantine and disinfection measures carried out. Drug shops are regularly inspected and analysis made of drugs and chemicals if of doubtful quality. Burial regulations are carried out. Inspection of drains, disposal of garbage, etc., are under their management. Vaccination and re-vaccination every three years are compulsory; lymph is supplied from a vaccine farm; the method of vaccinating is by small punctures with a lancet, usually from three to six on each arm.

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* Statistics used in this paper were kindly furnished from the records of the city Sanitary Bureau.

There are about forty hospitals in the city. The largest of these is the Government General Hospital, in connection with which is a medical college; and recently there has been added a school for midwives and the Red Cross Society's training school for nurses. It has accommodations for 360 in-patients, and a daily attendance of about the same number of out-patients. The work began twenty-five or thirty years ago, in temporary quarters in the outskirts of the town. It was removed soon after to a large temple in the center of the city — an undesirable location on account of a moat half filled with stagnant water which surrounded the place, and foul drains in the neighborhood, a common condition in those early days. Here it remained till buildings were erected on the present site nineteen years ago. The buildings are two-storied, of modified foreign architecture on the pavilion plan. The wards are divided into small rooms, one for each patient. Most of these are furnished with bedstead and bedding; others in Japanese style, the patient lying between quilts on the matted floor, as they are accustomed to do in their homes. There are a few special wards for the treatment of cases of insanity. Asepsis is observed in surgery, and modern methods of medical treatment adopted. The number of charity cases is limited to sixty. Fees are charged for other patients, and the deficit for running expenses is raised by city tax.

The number of students now attending the college is 320. Material for dissection is supplied from the city prisons. Opportunities for *post-mortem* examinations, owing to popular prejudice against autopsies, are confined almost entirely to charity cases. The course of instruction covers six years, algebra and physics being included in the first two years' study. Unlike the Imperial University, Tokyo, where German is used, the lectures and textbooks are in the Japanese language. A Dutch doctor was employed as medical and surgical instructor for a number of years when the work was inaugurated, but for the last sixteen years it has been carried on by the Japanese alone. There is one charity hospital — of 78 beds — established and supported by the Empress and other contributors. There is one hospital under the auspices of the American Episcopal Mission, one military hospital and a government lock-hospital. The others are private institutions, mostly pay-hospitals, where a few charity cases are also treated, having accommodations, according to their size, for from a dozen to three hundred patients each. One in connection with a Christian church is attended by a medical missionary of the American Board Mission. Some are for special diseases; three are for the insane. Most of them are in Japanese style, ventilation being chiefly by the sliding doors, and heated — if at all — by braziers of charcoal or occasionally by stoves.

There are three medical schools conducted in connection with some of these hospitals. The Government Medical School, however, is the only one in the city — one of six in the empire — whose graduates are exempt from passing the examination of the Government Board of Examiners in order to obtain license to practice.

In the prefecture of Osaka, which takes in a portion of the country outside the city proper, and has a population of 1,479,948, there are 1,752 physicians licensed to practice — one physician to every 866½ of the population; besides these there are many not qualified by license who practice as assistants to licentiates. Among those licensed (without passing the government examination) are practitioners of the Chinese system, and others who were in practice before the present qualification laws were enacted. The government examination covers anatomy, physiology, chemistry, materia medica, medical jurisprudence and the practice of medicine, surgery and obstetrics. Only the regular school of practice is recognized. A diploma from a foreign medical college entitles the holder (if a Japanese subject) to license without examination. A bill was introduced in Parliament requiring examination in these cases, but thus far it has failed to pass.

A national pharmacopœia has been adopted, and the metrical system is used in writing prescriptions and in laboratory and other scientific work. In feudal times physicians were of the sworded-gentry class, and the calling was handed down in the same family from generation to generation. Holding hereditary grants from their respective lords, they were not dependent upon practice for support; and it was not customary to demand stated fees for service or medicine; the patient made a present to the physician if so disposed. At the present time physicians usually dispense their own medicines, and the income of most of those who have a private practice only is derived chiefly from the sale of medicines supplied. Efforts have been made to popularize prescription drug stores, but with little success so far. There are, however, many shops where drugs and a great variety of nostrums and toilet and other articles are sold, and a few where prescriptions are filled by licensed pharmacists; besides other places, there is one street consisting almost entirely of wholesale shops for supplying hospitals, physicians and towns in the interior with drugs and chemicals. Amongst the drugs are many which are considered worthless at the present day, and are used only by the old-style practitioners. Most of these practitioners, however, now make empirical use of modern medicines also to some extent; and from ancient times some most potent drugs, *e. g.*, aconite root and nux vomica, have been in use.

Besides the system introduced from China, some knowledge of medicine and surgery was obtained from the Dutch and Portuguese in early times. They had various obstetric and surgical instruments, which have largely given place to patterns now used in western countries, yet there are a few which are still used to advantage. The more advanced practitioners are alert in adopting the most recent methods of the West, and among them are some who have attained to a considerable degree of practical skill in both surgery and medicine.

There are several medical societies and associations. A number of medical periodicals are issued; one journal is published for the benefit of midwives and nurses. It has always been the custom in cases of childbirth that they be attended by midwives, a physician being called only in difficult cases. During labor and for some time after delivery the woman was kept sitting on her feet in an upright position, not being allowed to lie down even if fatal syncope were imminent; superstition and ignorance largely prevailed in the whole management. An advance — such as it is — has been made in educating the midwives. There are now 1,241 licensed midwives in the prefecture, besides other professional nurses for medical and surgical cases only, who are an aid to the practitioners in their treatment of cases in private practice and in hospital, and help to educate the people in hygienic matters. Insanitary customs and old prejudices and superstitions still obstruct to a considerable extent the carrying out of measures for the prevention of disease and the treatment of patients.

In the prefecture there are 3,197 needle and moxa practitioners licensed to practice. They are not considered as members of the medical profession proper; a knowledge of how to practice their special art only is required in order to obtain license. The needles used are of gold, silver or other metal, very slender, and from two to three inches long, varying somewhat in shape, size and length, according to the exact purpose for which they are to be used; one is for the extraction of "surplus vital spirits," one for the extraction of "pent-up vapors in the joints," etc. There are text-books on the subject, with diagrams to illustrate the mode of ascertaining the proper localities for the application of the moxa or needle in the various diseases. "All diseases are caused by obstruction of the blood and spirits; by piercing with the needle this obstruction is removed, and by the moxa healed." The most common material used for the moxa is a preparation from the leaves of the *artemesia chinensis*.

Another class devoted to the alleviation of physical ills is the shampooers, who practice a kind of massage, of whom there are 1,352 licensed. Many of them are blind. They have their round of streets which they travel, blowing a sort of whistle as a signal to their patrons, which can be heard at all times of the day and night. Bonesetters are now comparatively rare, there being only eleven licensed. The number of licensed dentists is thirty-three, some of whom received their training in the United States. Opticians are numerous, and there are several firms of surgical instrument makers, which supply the home market to a large extent.

Of the diseases common in Western countries, scarlatina is one which does not prevail here, though cases are said to have been seen in other places in Japan. Beri-beri is endemic. Cases of distoma pulmonalis coming from certain districts in the empire are frequently met with. The symptoms are cough, with expectoration of sputum, a portion of which is usually mixed with blood. This may continue an indefinite number of years without seriously affecting the health, or hæmoptysis or pneumonitis may occur at intervals, exhausting the patient in proportion to the severity and frequency of these attacks. Microscopic examination of the sputum with one inch objective reveals numerous ova, most abundant in the part which is only slightly tinged with blood; the flukes themselves are less frequently seen. They are about one-third the size of the distoma hepatica, measuring, according to Japanese text-books, 8 to 10 millimeters in length and 4 to 6 millimeters in width; the ova being from .08 to .10 millimeters in length and .05 millimeters in diameter. Leprosy prevails to a considerable extent. For centuries past it has been considered hereditary, insomuch that in proposed marriage contracts the most searching inquiries are made with regard to the genealogy of the parties. Isolation of the family in which the disease occurs is common. The disease being considered a special punitive infliction, families affected segregate in large numbers in some of the "sacred mountains" in the country. Some go to certain mineral springs, which have the reputation of being of some benefit. Others remain in their homes. There are also some small hospitals for the treatment of leprous cases. Very recently, the contagiousness of the disease having been recognized, steps are said to have been taken toward securing individual isolation and better medical treatment of lepers, the work to be undertaken first in the three cities of Tokyo, Osaka and Kyoto. An instance showing the contagiousness of the disease is reported to have occurred lately in a village where some lepers were living, the disease gradually spreading throughout the village and from that to surrounding villages.

Tuberculosis is one of the most extensively prevailing diseases, and has been so from time immemorial. Infected beef and milk have had no part in its dissemination, inasmuch as these articles, until recent years, have not been used as food. Some of the customs of the people from a sanitary point of view evidently need no reform on Western lines; *e. g.*, hand-shaking and kissing have no place in their graceful form of salutation. Cremation was formerly the most usual method of disposal of the dead here, as in the other densely populated towns. The practice was forbidden by the government about twenty years ago, and only earth burial allowed; but the prohibition was soon rescinded, improved crematories were introduced, and cremation is now the prevailing, though not exclusive, custom.

Osaka being one of the treaty ports, it has a foreign concession, where the foreign residents live, under extra-territorial jurisdiction. It is a small foreign settlement situated in the western part of the city, near the custom house and principal wharf, with a Bund and river frontage in three directions. It is laid out in comparatively wide streets, with sidewalks and shade trees, is well drained, and has its own police force, fire brigade, etc., and is governed by a Municipal Council composed of the consuls of the treaty powers and three members elected by the foreign residents, the Governor of Osaka being also an *ex-officio* member. When the revised treaties come into operation next year extra-territoriality in Japan will become a thing of the past; all foreign residents will become amenable to Japanese law, and subjects of treaty powers will be allowed to live in any part of the country. So far as foreign physicians and surgeons seeking remunerative practice are concerned, however, it is not a field that offers any attractions, and whether they will then be permitted to practice, and, if so, what regulations may be imposed, has not yet been officially announced.

5 Concession, Osaka, Japan.

For the Annals.

THE HISTORY OF MEDICINE.*

By WILLIAM O. STILLMAN, A. M., M. D.,

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No. 2.

(*Continued from the September* Annals, *page 454.*)

We now come to consider the beginnings of European medicine as shown in the early Greek school. Of the age of fable and myth in Greece we have little concern. Recorded medical history began there with Hippocrates, although there can be no doubt that little of his art was original. His contributions to medicine are conceded to have been founded, in the main, upon previously existing knowledge, which he conveyed to posterity filtered through the medium of his excellent common sense, honest and correct judgment, and superior intelligence. No one man can create a complex science like medicine, no matter how marvelous his erudition and genius. Rules and facts must have accumulated in a vast store before the days of the "father of medicine," as Hippocrates is called, for medicine was gray with age before he had been born.

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* An abstract of the course of lectures delivered at the Albany Medical College during the term of 1897-8.

Nevertheless, with the advent of Hippocrates a new era began. He must always remain a colossal figure in the history of medical science. His most noteworthy contribution to the practice of the healing art was his example of careful and accurate clinical observation. In this respect he was a reformer. It is curious that what to us seems so simple and obvious, namely, that a systematic and intelligent study of symptomatology and physical conditions in the sick can be the only key to correct diagnosis and successful treatment, should never have occurred to most of the ablest practitioners of every nation of antiquity. To be sure, Hippocrates was deficient in his knowledge of anatomy and physiology, and the world had to wait hundreds of years before these studies were rationally carried on by the very simple expedient of dissections of dead bodies, and the careful study of the excretions of the living ones. This was first most successfully and openly accomplished long after Hippocrates, during the golden age of scientific discovery at Alexandria, under the protection and encouragement of the Greek kings of Egypt. When speculation gives place to the unbiased observance of fact, then science assumes form.

The only immediate predecessor of Hippocrates who attained special eminence was Pythagoras, and he was rather more of a philosopher and a mystic than he was a physician. Pythagoras lived 580 to 510 B. C., and is credited with having first established the practice of visiting the sick at their homes. Before that they were, without exception, as far as we know, brought to the temples or physicians for treatment. He was very strict in his system of dietetics, but, as was naturally the case, not always rational or scientific. He had traveled far, and his learning was great, as he was familiar with the occult lore of Egypt, and India, and Persia. He was the last of the Greek sages to employ hieroglyphic writing, and wrote his works in these characters. He invented, or at least first propounded, the theorem of the square of the hypothenuse, and first divided the year into 365 days and 6 hours. He seems even to have understood the movement of our planetary system, possibly deriving this knowledge from those inveterate star-gazers, the Chaldeans. His influence was great, the numbers of his disciples vast, and he founded many schools and did much good. His mystic system of numbers, which he even applied to the practice of medicine, was apparently derived from the Egyptians, and formed the basis of a philosophical conception of God and matter, of great grandeur and completeness, as contrasted with the vague speculations and insufficient cosmogony of the priests. He captivated the intellect and imagination of the young men of his day, it is said, but prodigious success on the part of his disciples begat pride, insolence and dishonesty; and the world-famous Pythagorean Society was soon dispersed, as a result of its ultimate moral unworthiness and rapacity.

Of his two immediate successors in popular esteem, Alcymæon and Democedes, but little is known, except that the former was an anatomist of repute, and was said to have dissected the eyes and ears of animals, thereby discovering the optic nerve and the Eustachian canal. Sleeping and waking he explained were due to the ebb and flow of the blood in the great vessels, the stopping of which he claimed produced death. He was an acute observer, and described disease "as a disturbance of the equilibrium of the vital activities by the predominance of some one of them."

The history of Democedes (B. C. 520) is chiefly interesting as showing that there was a well-established and extremely well-paid public medical service in Greek cities in the sixth century before Christ. Herodotus tells us that he was chosen public medical officer of Ægina at a salary of one talent (about $1,200) a year, and money in those days was worth at least five times what it is now with us. A year later he went to Athens in the same capacity, receiving about $2,000 per annum, and finally he was invited to Samos, by Polycrates, at the yearly pay of $2,400, equivalent to about $12,000 in our times. It is worthy of note that the pay of an Athenian ambassador in the days of Aristophanes was about one-twelfth of that paid this popular physician by the government. A contemporary of the preceding, Empedocles of Agrigentium, discovered the labyrinth of the ear, and explained sound by the impact of the air upon it, as upon a drum. He also solved some very important sanitary problems controlling certain prevailing pestilences by purifying a water supply and similar practical engineering feats.

These brief references will serve to give you an idea of the rational activity and public status of the medical profession just previous to the advent of Hippocrates upon the scene in Greece. It will be noticed that the way was well prepared for his master mind, as the profession was vigorously alive and inclined toward scientific discovery, and the public was sympathetic and appreciative. The medical guild, then as now, had its share of quacks and ill-trained hangers on, who were parasitic in their nature, contributing nothing to progress, and perverting and degrading scientific truths. In addition to priests and philosophers, who, more or less, attempted to practice medicine, there were the gymnastic trainers, who were not content to exercise their natural functions among the athletes, but were accustomed to give massage, dress wounds and ulcers, reduce dislocations, treat abcesses, bleed the sick, and even direct pharmaceutical treatment.

Such was the general condition of the practice of the healing art when Hippocrates, of Cos, the greatest name of ancient medicine, was born, 460 years B. C. It should be borne in mind that there were seven others of the same name, who flourished about the same time, and that he was the second of the series. He came from a family in which the practice of medicine was hereditary, and there were many such families whose sons were predestined to be physicians. He was subsequently given a fabled descent from Æsculapius on his father's side, and from Hercules on his mother's. He is said to have lived to be about 100 years of age, although but little is known of his personal history, except that he traveled extensively. He was born on the Island of Cos, now called Stan-Co, near the coast of Ionia, and achieved great fame even in his lifetime, for he was called "great" by his contemporaries, and such commanding intellects as Plato and Aristotle quoted him as an authority. He not unworthily represented the science and art of medicine in the golden age of Greece, under Pericles, when that insignificant country produced more intellects of the first order in every department of mental development than any other country of the world has ever shown, before or since, or possibly even all the rest of the world together.

Celsus tells us, in a well-known passage, that Hippocrates first separated medicine, not from priestly domination, but from the hindering entanglements of philosophy. His writings were numerous, and were supplemented by many additions by his descendants under his name, and also by works written by unscrupulous impostors and attributed to him. Among his genuine writings are treatises on "Airs, Waters and Places," "Regimen," "Salubrious Diet," "The Laboratory of the Surgeon," "Articulations and Dislocations," "Fractures," "Wounds of the Head," and a surgical work called "Mochlicus;" also works on "Diseases of the Eye," "Fistula" and "Hemorrhoids," "Epidemics," "Prognostics," and others. His book entitled "Aphorisms" is perhaps his most famous production. It cannot be read, even now, without wonder and admiration. An eminent American surgeon declares that "no medical work of antiquity can compare with it." Until the revolution in France the faculty of Paris compelled aspirants for the medical degree to be familiar with these aphorisms.

The two most valuable contributions which Hippocrates made to medicine were, first, his total rejection of the supernatural in medicine, a position of incalculable benefit to the profession in the line of advancement, as all thought at that time was more or less tainted by a firm belief in witchcraft and supernatural delusions. He plainly says ("Airs, Waters and Places") that "no one disease is more divine or more human than another," and that "none arises without a natural cause." His second contribution was the teaching of careful and accurate clinical observation, and taking notes of the same. Indeed, he seems always to have been around with his note-book in his hand. It was his substitution of recorded fact in medicine for philosophical abstractions that first made medicine a science, namely, a system of authentic knowledge arranged in an orderly and rational manner. He was curiously destitute of offensive egotism, and always gave his predecessors due credit. As showing the absolute scientific honesty of the man, I may recall the fact that of the 42 clinical records of cases which appear in his existing works 25 ended fatally.

Hippocrates proffered several dogmatic theories, however, which have not been given final acceptance. What for centuries was known as his "Humoral Pathology" was finally displaced by a more correct knowledge of anatomy and physiology: and yet this theory ruled the medical mind universally for hundreds of years, more or less, even down to the time of Harvey. According to this theory the body contains four humors — blood, phlegm, yellow bile and black bile — a right proportion and mixture of which constitutes health; improper proportions or irregular distribution, disease. This doctrine undoubtedly attained a wider acceptance through the powerful influence of Galen, who incorporated it with his teachings and expanded it. Other dogmas of Hippocrates which have not stood the test of later scientific enlightenment are known as "Coction," "Crisis" and "Critical Days." In acute diseases it was supposed that the humors went through a natural process of change, or "coction," whereby they were prepared for elimination at the proper moment, called the "crisis," from the body, either through the skin, kidneys or bowels. An acute attack terminating in a sweat is an illustration of this hypothesis. "Critical days" were, of course, closely associated with the doctrine of "crisis."

In treatment this great physician attached much importance to regimen, personal habits and a proper diet, and gave minute directions concerning them. He regarded drugs as of secondary importance, but they were much used, and 265 are said to be mentioned in the entire Hippocratic collection. Exercise was much enjoined in proper cases, and blood-letting, although known, was little practiced. It is curious that with all of Hippocrates' really remarkable powers of observation that the pulse is never once spoken of in any of the works considered genuine.

The "father of medicine" held a high conception of the dignity and usefulness which pertain to the true physician. He abhorred mysticism and mercenary motives, and demanded a proper consideration for the feelings of patients. He commanded that his disciples should lose a fee rather than trouble a sick person about it, for he said, "The memory of a good deed is better than a temporary advantage." He treated the poor and stranger equally well, saying, "Where the love of the art is, there is the love of man." The oath which he required his disciples to take stamped him as a great moral teacher. It has excited the admiration and reverence of the profession for ages, and is used occasionally even now. Perhaps nothing that he has written shows better his ineffaceable modesty, judicial judgment and fairmindedness than the opening aphorism of his immortal collection:

"Life is short and art is long; the occasion fleeting; experience fallacious, and judgment difficult. The physician must not only be prepared to do right himself, but also to make the patient, the attendants and externals co-operate."

(*To be continued.*)

287 STATE STREET.

For the ANNALS.

A CASE OF PULMONARY TUBERCULOSIS ASSOCIATED WITH ROUND ULCER OF THE STOMACH.

BY W. H. HAPPEL, M. D.,
AND
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The following case seems worthy of being put on record on account of certain clinical and pathological peculiarities which it presents:

Mr. J. E., aged 45, married, a native of Germany and a cigarmaker by occupation, was first seen on April 6, 1898. He complained that he was suffering from "catarrh of the stomach," which he had had for several years, and which he now felt was growing worse.

His family history is uncertain. There is no malignant disease or tuberculosis in his family, but he does not know whether his father and mother are alive or dead. His grandparents were long-lived.

His previous history is negative, except that he believes that he has had several attacks of "catarrh of the stomach." These attacks, he explains, consisted of a feeling of fulness after eating, together with a general bad feeling in the stomach and bowels. The attacks were not usually accompanied by spontaneous vomiting, but he sometimes felt obliged to introduce his finger into his fauces which caused vomiting and gave him considerable relief. At one time, however, he vomited frequently over a period of several months. He does not know how long these attacks of stomach derangement lasted, nor when they first began; it may have been two or even five years ago, or longer still. He is a moderate user of alcohol as a rule, drinking beer only; at times he has fits of hard drinking. He is not certain that the attacks of stomach derangement did not always come on after these excesses. He denies all venereal history.

His present symptoms are mainly referable to his stomach. He has burning in the region of the stomach irrespective of the presence or absence of food; at times some real pain is present, but always of a dull character. He has slight nausea at times. His sense of taste is impaired, " everything tastes like straw," as he puts it. Several months ago he had some severe attacks of vomiting, extending over several days; he has not vomited now for several weeks. The vomitus is not always food, but often only a glairy fluid. At times he has a feeling of pressure across the abdomen when he is in the sitting position, and sometimes he is troubled considerably by flatus, the passing of which gives him great relief.

Symptoms referable to the chest were practically absent; there was no cough, no pain in the chest, no palpitation; there was, however, dyspnœa on the slightest exertion. The patient was forced to give up work a few days ago on account of weakness. His bowels move three to four times daily, the passages are watery. No disturbances of micturition.

The following are the notes on the condition at the first visit:

The patient is a pale man, the skin being inelastic and of a slightly yellowish tinge. The sclerotics are slightly jaundiced. The tongue, when protruded, is cyclindrical and slightly coated. There is considerable chronic pharyngeal catarrh. The cervical glands are not enlarged, nor is the thryoid gland. The voice is weak and somewhat hoarse.

The chest is slightly barrel-shaped in its upper half; in the lower half over the sternum it is funnel-shaped. The supra-clavular fossæ are much sunken, the intercostal spaces not markedly so. The circumference of the chest at the nipples is 36 inches, expansion is 1½ inches. The movement of the chest is symmetric but arhythmic. On percussion the pulmonary resonance is not as marked as in health, but is even over the whole extent of the chest. On auscultation there is no appreciable lengthening of expiration, the vesicular murmur is decreased in volume and cannot be made out over certain portions of the lung; where audible it has a puerile character. Apical breathing is faintly, if at all, audible even with the phonendoscope. No râles are heard. The apex beat is palpable in its normal position; it is weak. The heart sounds are normal.

The liver dullness is diminished. The area of spleen dullness is normal. There is a diffuse mass in the epigastrium, which cannot always be made out. No ascites. Slightly marked caput Medusæ. The temperature is normal; the pulse 96, weak, at times irregular.

One week before death the patient's bowels became markedly constipated, the stools consisting of a grumous tarry material (this was not due to any remedial agent). The temperature was running from F. 98° to F. 99°, irrespective of the time at which it was taken. Five days before death a severe cough developed, and at this time a second examination was made with a consultant. A few tracheal râles could be heard, but the chest symptoms were no more definite than at the first examination. An attempt was made at this time to procure some sputum, which was said to be greenish or even dark; the specimen was, however, carelessly thrown away by an attendant, and later the patient was unable to expectorate. The fæces were examined for possible pancreatic disease, but no free oil was found in the stools after the ingestion of half a pint.

On his third visit the patient was given an Ewald test breakfast, which was removed at the end of two hours by Einhorn's bucket. The breakfast was still present in an undigested condition. With Gunzburg's reagent no free hydrochloric was detected, though free acid was present, presumably lactic. One hour after the removal of the test breakfast the patient vomited spontaneously, and the fluid thus obtained also showed lack of free hydrochloric acid.

The patient died May 4, 1898.

The autopsy was made eight hours after death. The following was the anatomical diagnosis: Advanced tuberculosis of both lungs with cavity formation; chronic adhesive pleuritis; brown atrophy of the heart; multiple round ulcers of the stomach; swelling of the follicles of the spleen; cloudy swelling of the liver and kidneys; fatty atheroma of the aorta.

The following notes are abstracted from the autopsy protocol: Body of a moderately built, extremely emaciated man. Rigor mortis well marked. Post-mortem lividity of the dependent parts. Surface of the body in general pale. The abdomen presents a scaphoid appearance. Subcutaneous fat practically absent. The peritoneal cavity and its contents present nothing abnormal in appearance or arrangement. The pericardium and the heart are likewise normal except for a few patches of fatty atheroma in the aortic leaflet of the mitral valve. The changes in the lungs are marked. On the left side the pleural cavity is almost obliterated, the lung being closely bound down by old fibrous adhesions. Both lobes, especially the upper, are much increased in consistency; many hard nodules can be felt in the lung substance. On section the upper lobe presents a mottled appearance, due sometimes to circumscribed areas of caseous material, sometimes to diffuse areas of similar substance. At four or five points in the lobe are cavities, the largest of which measures 3 c. m. in diameter. In the lung substance between the caseating areas a few pinhead-sized gray miliary tubercles are to be seen. In the lower lobe the section shows an almost homogeneous reddish brown surface, in which a few bean-sized caseous areas are present. There is congestion of the mucous membrane of the bronchi which contain a small amount of muco-purulent secretion. On the right side the pleural cavity is also obliterated. All the lobes of the lung are firmer than normal. At the apex of the lung there is a large depression which on section is seen to correspond to a cavity the size of an orange, containing greenish-yellow, foul-smelling, purulent material; the walls are very ragged, and portions of lung substance project into the cavity. The rest of the lobe shows areas of diffuse or localized caseation. The middle and lower lobes are similar in appearance to the lower lobe on the left side. The spleen measures 14 x 9 x 5 c. m., there is slight increase in the pulp, and prominent and swollen Malpighian bodies. The liver shows the ordinary appearance of cloudy swelling. The kidneys show congestion, with slight thinning of the cortex in places, and a few tubercle nodules on their surfaces. There are a number of patches of fatty atheroma in the aorta.

The œsophagus and intestines are normal. The stomach is about normal in size and moderately distended with gas. Posteriorly it is adherent to the duodenum by fairly strong adhesions, and about its middle portion it is also adherent to the pancreas. On being separated from the latter organ there is to be seen on the external surface of the stomach an irregular quadrangular loss of substance extending entirely through the stomach wall; this opening measures 3.5 x 2 c. m. Its walls are very firm and indurated, quite sharply cut, but irregular. Excepting immediately around this opening the serous coat of the stomach is normal. On the anterior surface of the pancreas, 5 c. m. from its caudal end, there is an area which corresponds in its dimensions and position to the opening in the stomach wall, and which forms the base of the stomach ulcer to be described later. This portion of the pancreatic surface presents a yellowish-brown clean appearance, and is slightly elevated above the rest of the pancreatic tissues. The stomach on being opened contains a small quantity of partly digested food, and sticky mucus; the mucous membrane is covered with large quantities of sticky mucus, and in places there are areas of atrophy of the mucosa; the latter is somewhat mottled in appearance, the prevailing color being grayish-brown, the mottling being due to patches of vascular injection. Nine centimeters from the pyloric orifice, and four above the greater curvature, there is an ulcer, a part of whose floor is occupied by the opening in the stomach wall already described; the ulcer is irregularly oval, and measures 5 x 4 c. m.; the margins are sharply circumscribed, fairly regular, and hard in consistency; the sides shallow and abrupt; the base is formed by the muscular coat of the organ and by the pancreas as described above, and is covered by a small quantity of sticky mucus. A number of pin-head sized light yellow nodules are present on the base which strongly resemble caseous tubercles. A number of blood vessels containing clots stand out prominently on the base of the ulcer. Besides this larger ulcer there are present in the mucosa four smaller ones situated between the pylorus and the main ulcer. Two of these are of oval shape, and of about the same size, measuring 1 x .5 c. m.; the remaining two are smaller and almost circular in outline, one having a diameter of .5 c. m., and the other of 2 m. m. The edges of these ulcers are sharp.

distinct and slightly elevated, and their bases are covered with a sticky mucus. The bases of the two larger of the ulcers are apparently formed by the serous coat, while those of the smaller do not seem to extend beyond the mucous coat. Around all of the ulcers the mucous membrane is congested, but no tubercles can be made out in it.

A microscopic examination of material scraped from the base of the ulcers showed debris, epithelial cells and many bacteria. Large numbers of tubercle bacilli were present in cover slips made from this material; they averaged from eight to ten in each field under the oil immersion, but in places were much more numerous, occurring in masses made up of from twenty to forty bacilli.

The main microscopic changes in the tissues affected the lung, liver, spleen and stomach. The heart showed slight interstitial myocarditis and fragmentatio myocardii. The kidneys showed the lesions of cloudy swelling. The section from the lung shows numerous diffuse areas of caseous degeneration, some occupying three or four fields under the low power. Besides these there are nodular areas of cellular infiltration made up of epithelioid and lymphoid cells, and containing giant cells; most of these are caseated in their central portions. Between the consolidated areas the alveoli contain an exudate composed mainly of desquamated alveolar epithelium, but containing also a few polynuclears, and a moderate amount of fibrine. The liver and spleen both contain many typical nodular tubercles, usually small and discrete, and showing central degeneration.

The stomach ulcers show all the characteristics of the ordinary round ulcer. Their edges are sharp cut, and show very little sign of inflammatory change; their bases are made up in the most superficial part of tissue resembling an organizing granulation tissue, *i. e.*, small round cells with a few epithelioid cells among which run new formed vessels. For the most part the base is made up of almost fully formed connective tissue containing many new formed blood vessels, and between this tissue lie bundles of smooth muscle fibre, the remains of the muscular coat of the organ. In places the presence in this tissue of lymphoid and epithelioid cells strongly suggests a tuberculous process, but the general arrangement is not that seen in diffuse tuberculosis.

and the presence of numerous new-formed blood vessels strengthens the idea that the process is merely one of organization. Occasionally quite circumscribed nodules occur in the floor of the ulcer between the muscle bundles, but though made up of small round and epithelial-like cells, they show no definite arrangement such as seen in tubercle, and resemble similar collections of cells such as are often seen in organizing granulation tissue. The small ulcers show similar changes to those above-described, except that the process is less extensive, the ulcers extending only to the submucous coat. There is no evidence of necrosis in the cellular collections in the base of the ulcers; the surface of the ulcers is, however, covered by a small amount of necrotic material in which bacteria are present. No giant cells are present in the sections from the stomach. A careful search for tubercle bacilla was made in serial sections of the ulcer, but none was found in connection with the ulcerative process; in the necrotic material covering the floor or the ulcer a few bacilli could be demonstrated, as would be expected from the cover slip findings.

The case is of interest from a clinical standpoint on account of the failure to recognize the far advanced pulmonary tuberculosis, the patient's strange lack of consciousness of his pulmonary trouble, and of the fact that a gastric ulcer existed with the absence of free hydrochloric acid.

The original diagnosis in the case was carcinoma of the stomach, and this was confirmed by the consultant. The absence of physical signs, however, can be accounted for in the following way: The apices contained cavities sufficiently near the surface to produce resonance of a tympanitic character, which may have been modified by a certain amount of pneumo-thorax due to the escape of small amounts of air through the granular masses constituting the remainder of the apices. The lack of râles may be explained in the same way, and also by the patient's weakness on account of which he was unable to fill any but the most patent portions of the lung. Diagnostic error was further encouraged by the patient's denial of any bronchial trouble at any time. He admitted, however, the spitting of phlegm from the throat and nose. When the family, after the results of the autopsy were made apparent, were questioned, it was found that he had " spit up" some blood from his stomach. This was of an arterial character, and as much as half a teacupful at a time was brought up. These hemorrhages occurred 15 years ago. The occurrence of the severe cough shortly before death was due, no doubt, to an acute tubercular pneumonia. The patient's lack of consciousness of his trouble is due to the fact that there is a certain class of the public that observe remarkably poorly some of the commonest phenomena occurring in connection with their economy. The term "to spit up from the stomach" means with these people, clearing the throat, or coughing up, or regurgitating material, and it is only by the most careful avoidance of direct questioning that one arrives at the fact of a post-nasal or pharyngeal catarrh, or vomiting of food, retching (dry reaching) or of any cough. It is evident that this patient misconstrued very much some of his own symptoms. The absence of hydrochloric acid is found in a certain number of cases of ulcer, usually chronic cases. Hemmeter states that, according to his experience, about 12 per cent. of these cases show absence of hydrochloric acid. In this case the absence was doubtless due to the inactivity of the stomachic glands caused by the long continued atrophic gastritis, and also to the patient's great loss of vitality.

The interest of the case from a pathologic standpoint lies mainly in its bearing on tuberculosis of the stomach from a diagnostic and etiologic standpoint. It seems to have been generally assumed by writers on tuberculosis of the stomach that the presence of tubercle bacilli in the scrapings from the floor of a stomach ulcer characterized that ulcer as being of tuberculous origin; at any rate studies of this subject, in which great care was taken to avoid including doubtful cases, all refer to a case reported by Habershon, in which the diagnosis rested on the finding of tubercle bacilli from scrapings, no histological examination having been made. From Habershon's description of the case it seems likely that it was similar to that above reported, and not tuberculous at all. The ulcer is described as being neither as deep nor as sharply defined as a simple gastric ulcer, but nevertheless was perfectly circular, and apparently similar to the smaller ulcers in our case. It would seem that the simple finding of tubercle bacilli in the scrapings from the ulcer floor can no longer be regarded as proof of its tubercular character. This case is also interesting in its bearing on Klebs' theory regarding large tuberculous ulcers. Klebs claims that in most cases of large tuberculous ulcer of the stomach, where the process is not due to direct extension from a tuberculous focus outside of the stomach, it is due to the inoculation of tuberculous material on a simple ulcer, in cases such as this, from the swallowing of sputum. That this tuberculous transformation of simple ulcers is possible is shown by the cases of Cordua and Breus, in both of which simple ulcers due to corroding poisons became inoculated with tuberculosis. It would seem that in this case everything was favorable to the inoculation of tuberculosis on the simple ulcers; both the stomach and lung processes were chronic ones, expectoration was profuse and was (judging by the history of the case) probably usually swallowed, and further at the one test made of the stomach juice this was free from free hydrochloric acid. Why inoculation of the simple ulcer in this case did not take place it is impossible to say; it tends to show that some other factor than the mere exposure of the ulcer to tuberculous material is necessary.

Correspondence.

MEDICAL EXPERT TESTIMONY.

MEDICAL SOCIETY OF THE STATE OF NEW YORK:

SPECIAL COMMITTEE ON MEDICAL EXPERT TESTIMONY: J. B. RANSOM M. D., Chairman, Dannemora; CARLOS F. MACDONALD, M. D., New York; WILLIS G. MACDONALD, M. D., Albany; A. WALTER SUITER, M. D., Herkimer; P. M. WISE, M. D., New York.

DANNEMORA, N. Y., *November* 5, 1898.

Editors "Albany Medical Annals," Albany, N. Y.:

DEAR SIRS. — Under the head of "State Medicine" in your issue of November 2d, a suggestion is made with reference to medical expert testimony, and the query set forth, "Why should not a committee be appointed by the medical society of the State of New York to draw up, in conference with willing members of the legal profession, a bill which will cover the examination and appointment of medical experts?"

I can hardly credit that the ANNALS is unaware of the existence of a special committee, appointed in February, 1896, for this very purpose; the introduction of a bill to the legislature in March, 1896, of its failure to be reported out of the judiciary committee on an alleged constitutional infringement, and the appointment, at the last meeting of the society, of a new committee, the personnel of which heads this letter, and of their several meetings in Albany in conference with a committee of the Homœopathic Society, which was so freely noticed in both the medical and lay press at the time.

The committee thus appointed have labored earnestly and arduously to bring forth a bill which is feasible and likely to become a law. The ANNALS can feel assured that nothing possible will be left undone by this committee to prepare such a measure for introduction into the legislature this winter, and will push its enactment with due diligence.

By referring to my paper, read before the Medical Society in January last, and published in the ANNALS in June, 1898, issue, you will be able to gain somewhat of an idea of the work done along this line by a former committee, and the present status of this whole question is there briefly set forth.

Very respectfully,
J. B. RANSOM,
Chairman Committee.

Editorials.

Out-Patient Departments for the Insane.

In his eminently practical Presidential Address, delivered last July before the Medico-Psychological Association of Great Britain and Ireland, Dr. A. R. Urquhart referred, among other important matters, to the success attending the administration of out-patient departments for the insane at St. Thomas' Hospital, in London, and at the Sheffield Infirmary, and entered a plea for the establishment of a similar department in connection with the Edinburgh Royal Infirmary. (*Journal of Mental Science, October, 1898.*) Dr. Urquhart's address was limited to lunacy matters in Great Britain and Ireland, else reference to the pioneer out-patient department of this kind, in connection with the Pennsylvania Hospital, and the new Department of Mental Diseases at the Boston Dispensary, established during the last year, might have been appropriately made. We learn from the reports of the Pennsylvania Hospital that " the physicians of the Department for the Insane attend for the purpose of giving advice and imparting information to persons who are suffering with supposed premonitory symptoms of mental disease. Many have been cured or relieved by timely aid and saved a prolonged stay in some hospital." We have not seen a report from Dr. Rayner, who has developed this service at St. Thomas' Hospital, but he came to this work well equipped by experience as medical superintendent of one of the large English asylums, and in an indirect reference to what he has accomplished, we note that not the least of the benefits to be derived has been what might be called, for want of a better word, the " medicalization " of cases of incipient insanity. He has been able to refer the numerous minor ills complained of to the other departments of the hospital, and has thus aroused the interest of the staff in the advantages of a thorough examination of insane patients and of the good effect upon mental disorder of the treatment of somatic complications. These out-patient departments have consequently been of advantage not only to the patient but to the hospital staff.

At the Albany Hospital an out-patient department for nervous diseases was instituted in 1895, and patients are seen and treated there twice weekly. Many cases of insanity have presented themselves or have been brought by their friends, and have received advice, not only in the matter of treatment, but as to the necessity of asylum care, and as to methods of commitment. This department has had numerous opportunities to explain the rules and workings of State hospitals for the insane, and has thus been able to prevent much of the misunderstanding and friction often accompanying the commitment and detention of patients. At a meeting of the board of governors, held November 7, 1898, a resolution was adopted in recognition of this function, and the department is hereafter to be known as the department for " Nervous Diseases and Insanity."

The wants of the insane are to have further provision in the new hospital, where a ward for the care of patients pending their removal to a State hospital will be provided, and the necessity of a stay of several days in a police station or in the county jail will be obviated. In this ward will be treated also such cases of incipient or tractable insanity as do not require the special resources of a hospital for the insane, and, in the avoidance of any designation to indicate its special function, will be recognized the universally medical character of mental disorders.

These plans look to the best care of the insane, and with the easy adaptation in Albany to the ideals pointed out for Edinburgh go the best wishes for its speedy accomplishment in the latter city, as a need urged by no less authority than that of the president of the British Medico-Psychological Association.

Scientific Investigations.

A paper by Professor Williams, of Johns Hopkins University, published in the October number of the *American Journal of Obstetrics* and abstracted in the November issue of the ANNALS, is a valuable and timely contribution to medicine, not only because of the importance of the subject of which it treats, but also on account of the lesson it teaches to all investigators.

The title of this paper is "The Bacteria of the Vagina and their Practical Significance." This subject was one of the greatest practical importance at a time when the results following and the value of antiseptic midwifery were being everywhere recognized. Absolutely contradictory results were, however, obtained by equally able observers investigating this subject. Döderlein, Steffeck, Wilte and others stated that lochia obtained from the vagina of pregnant women contained not infrequently pyogenic streptococci and staphylococci, while Krönig, Menge, Thomen, Gönner and Lamschin found that the vaginal secretion never showed the presence of septic bacteria and that the vagina is, therefore, aseptic. The practical bearing was that if the former were correct, antiseptic vaginal douches should be employed, while, if the conclusions of the latter were true, such douches were probably injurious or at least absolutely unnecessary.

Williams, in investigations made in 1893, found that his results were similar to those of Döderlein, but last year, in view of this marked discrepancy in results, he repeated his work, following as closely as possible the methods of Krönig, and found that the vaginal secretion was practically sterile. He concluded, therefore, that the difference in results is due to the technique by which the secretion is obtained. This enforces the lesson that investigators, when they obtain contradictory results from similar conditions, should each carefully examine the technique of the other in order to exclude every possible source of error in their work, and should not be satisfied until such differences have been fully accounted for.

It also proves that nature is abundantly able to take care of herself in all normal physiological processes. In such cases interference is only mischievous and hurtful, not helpful. The physician should always keep in mind that his true position is to aid and not to improve upon nature.

The Annals for 1899.

The support now accorded the ANNALS and the demand upon space justify further extension, and with the new year each issue will be enlarged by an additional signature of sixteen pages, making a yearly volume of over seven hundred pages. An important feature of the enlarged ANNALS will be in the department of Current Medical Literature, in which abstracts of the practical articles of foreign and American medical journals will be classified and published. The general interest in this departure has been manifested by willingness of Albany colleagues to assume editorial duties, and the following arrangement has been made:

Surgery, edited by A. Vander Veer, M. D.; Medicine, edited by Samuel B. Ward, M. D.; Obstetrics, Gynæcology and Pædiatrics, edited by James P. Boyd, M. D.; Neurology, edited by Henry Hun, M. D.; Dermatology, edited by F. C. Curtis, M. D.; Psychiatry, edited by G. Alder Blumer, M. D.; Pathology, edited by George Blumer, M. D.; Bacteriology and Hygiene, edited by A. J. Lartigau, M. D.; Ophthalmology, edited by C. M. Culver, M. D.; Otology, edited by T. F. C. Van Allen, M. D.; Laryngology and Rhinology, edited by C. F. Theisen, M. D.

Associate editors will assist in the various departments, and special attention will be given to the medical interests represented in the various State bureaus. The Bulletin of Medical Legislation, so acceptably arranged by Dr. Pearse during the last session of the State legislature will be continued. Of local matters the Annals hopes to give complete and accurate synopsis, to the end that as a faithful contemporary record of general and local medical progress a permanent value will be obtained.

State Medicine.

EDITED BY HARRY SEYMOUR PEARSE, M. D.

Military Sanitation. — The Sanitary Club of Buffalo is contemplating, according to a recent circular letter, a meeting of experts to discuss the " details of establishing camps of instruction constructed upon strictly hygienic principles — asphalted floors and streets, water system, sewerage. * * * It is not intended that any criticism be introduced in any manner whatever concerning the recent war, but merely to discuss the feasibility of permanent camps of instruction to be maintained, ready for use at any time desired, by the general or local government."

The rapid strides of sanitary science have made the faulty construction of military camps, upon any other than a high hygienic basis, a criminal offense, and one not easily overlooked. Permanent camps of instruction, constructed on scientific principles, will be a necessity of the near future, and a thorough discussion of the subject by experts would be received with great interest.

Epidemic of Variola in New York State. — The general discussion on anti-vaccination lends special interest to the epidemic of small-pox now existing in the west-central section of the State. The disease was introduced into New York early last spring by the " Joshua Simpkins " troop. In a similar manner it has been recently introduced into Ohio by an " Uncle Tom's Cabin " troop. Though never acceptable, its advent into our State has come at an opportune time — furnishing an example of the results of the neglect of the authorities to enforce the vaccination laws, and giving an idea of what would happen should the anti-vaccinists have full sway.

Up to the present time over 200 cases have been reported with no deaths, but owing to the mildness of the type many cases were not recognized, and, therefore, not reported. Dr. F. C. Curtis, medical expert of the State Health Board, in his inspections, found many cases which had recovered and had not been reported. The local physicians in many places were hard to convince that they were dealing with mild variola and not chicken-pox as they had reported. In one place impetigo contagiosa was the poetic name given the epidemic. The almost absolute control and consequent rarity of small-pox in the State for many years has made the physicians careless, and, in some instances connected with the present epidemic, loath to accept the opinion of an expert who pronounced the disease small-pox, though some of them had never seen a case.

The following paragraph, taken from a circular issued by the State Board of Health under date of November 4th, indicates the lassitude which has overcome the school authorities: "It is found upon investigation by our inspector that in some places a very small percentage of the children in attendance at the public schools have been vaccinated, the school authorities in many instances having failed to enforce the provisions of section 200 of chapter 661 of the Laws of 1893." The Department of Public Instruction is lending efficient aid to the State Board of Health in requiring prompt action on the part of school authorities in enforcing this law.

This condition of affairs in New York State, newly unearthed, coupled with the fact that thousands of people are taking advantage of the "conscience clause" in the new English vaccination law, confirms the fact that the rigid enforcement of a compulsory vaccination law is the only means of controlling small-pox.

Anti-Vaccination. — It seems quite probable that vaccination in the United States will soon have to meet and contend with an organized antagonistic movement similar to that which has existed in England for the past forty years, and which, we are compelled to admit, has there been successful in no small degree. We are led to this conclusion by the fact that the leading anti-vaccinist of England, Mr. William Tibbs, is with us, and by the statement, said to have been made by him, that the members of the anti-vaccination league "were to start an agitation in this country against regulations of boards of health, which make it necessary for children to be vaccinated before they can enter the public schools, and also against the federal laws requiring all immigrants to be vaccinated."

It has been proposed by many medical men here, says Mr. Tibbs, that the next international anti-vaccination congress be held in America where there are many members of the league. This hardly seems credible, yet it is not difficult to believe, when we know that there are physicians, as well as laymen, who say that " vaccination does not prevent small-pox." It is charitable to say that ignorance is the cause for such a belief. No one can refute the facts that, before the discovery of vaccination by Jenner, whole races of people were exterminated by the disease; that in France, during the eighteenth century, 3,000 people died annually of small-pox; that it is computed of the century preceding vaccination that fifty millions of people died in Europe of small-pox. These figures are taken from the American Text-book of Medicine, and many others just as appealing can be found there and elsewhere.

If the deluded believers in anti-vaccination were told that just as much danger lurked in the exposure of the unvaccinated child to small-pox as to the bubonic plague they would scoff. If less risk were incurred it would be due entirely to the fact that the virulence of small-pox has been somewhat mitigated by generations of vaccination.

There is but a single argument, founded on reason, which the anti-vaccinists have held to; that is, that vaccination produces transmissible diseases, especially syphilis, tuberculosis and erysipelas. The strides of science have been so great that now even this argument does not hold and we cannot see that the anti-vaccinists have a leg to stand on. As Lord Lister said, the modern method of preparing the lymph does away with the possibility of the transmission of these diseases, and as far as erysipelas is concerned, it is just as apt to follow the scratch of a pin as the slight abrasion of vaccination.

As a substitute for vaccination these people hold that " personal and municipal cleanliness is their creed; " just how much confidence the sanitary authorities in England have in the purity of their motive is shown by the following quotation from the *London Journal of State Medicine for October*, " Now that anti-vaccination is made easy, medical officers of health and sanitary authorities will have to exercise increased vigilance to prevent epidemics of small-pox. Those who have urged that unsanitary conditions are the chief cause of the spread of the disease will probably be the last to take the initiative in inaugurating a campaign against these conditions, nor do we expect to find them expressing any great solicitude for the provision of isolation hospital accommodation, so as to be prepared for any emergency. Medical officers, however, may and should attempt to obtain the assistance of the anti-vaccinators in their efforts to improve the sanitary condition of the people, and in obtaining the requisite hospitals for promptly isolating any cases of small-pox which may occur. Wherever there is an outbreak of this disease the sanitary defects and the want of isolation accommodation will at once be charged with the disaster. These subjects, therefore, should be brought prominently before every sanitary authority at an early date, so that the medical officer of health may have a clear conscience whatever may be the result of the recent legislation." Sanitary officers in all civilized countries will sympathize with their brother officers of England and wish them success in their difficult task.

We doubt very much that the proposed crusade against vaccination in this country will be effectual; yet we would not be surprised if the cant and persistence of this league did reach the ignorant classes and cause trouble. And if for any reason whatever vaccinations should not be generally continued, we have but one thing to look forward to — the swinging back of the pendulum to another period of frightful epidemics of small-pox — a gloomy prediction, but one sure to be fulfilled if science is shorn of any of its power in the control of this disease.

Obituary.

WILLIAM MORGAN, M. D.

Dr. William Morgan died at his residence in Albany, November 7, 1898, after a short illness. He was born September 16, 1842, in this city, where he always resided, and after leaving the Albany Boys' Academy, he entered the Albany Medical College, from which he graduated with honors in 1869. He was elected a vice-president of the Alumni Association of the college in 1897. He entered the office of the late Dr. William H. Bailey, and soon after was appointed by Governor John A. Dix assistant surgeon of the Tenth Regiment, with the rank of captain. After several years of very successful practice he gave up his profession to establish a real estate and insurance agency, which he has since successfully carried on. In his business career, Dr. Morgan was recognized as a man of sound judgment and shrewd financial ability, and his reputation for fair and honest dealing earned for him the respect and confidence of all who came in contact with him. His universal good nature, quiet manner and unassuming way made for him many firm and lasting friends. He was a sustaining member of the First Presbyterian Church, and was prominently connected with many charitable organizations in the city, being regarded as a firm friend and supporter of benevolent institutions of all kinds. He gave generously of this world's goods, but no one knew of his charity save those benefited. Although not an active partisan in politics, Dr. Morgan was an ardent Republican, and, as a representative of that party, was for six years a member of the Board of Public Instruction in addition to holding several other municipal positions. He was a member of Temple Lodge, No. 14, F. & A. M., in which he was one of the oldest members.

In 1871 he married Josephine A. Conger, youngest daughter of William Conger, of Reidsville. Besides the widow, two sons survive, the elder, William Congdon Morgan, Silliman fellow and instructor in chemistry at Yale University, and the younger, James P. Morgan, who succeeds to his father's business.

Medical News.

Medical Society of the State of New York. — The following have been appointed as the Business Committee: Dr. Willis G. Macdonald. Albany; Dr. Edward B. Angell, Rochester, and Dr. James M. Winfield. Brooklyn.

Medical Society of the County of Kings. — The laying of the corner-stone of the new building of this society was celebrated with appropriate ceremonies on the afternoon of November 10, 1898. The address was delivered by Seth Low, LL. D., President of Columbia College.

ALBANY COUNTY MEDICAL SOCIETY. — A regular meeting was held on the evening of November 16, 1898, the Vice-President, Dr. Ullman, in the chair. In the absence of the Secretary, Dr. Neuman, Dr. Jenkins was chosen Secretary *pro tempore.*

Dr. Gordinier reported a case of " Brain Tumor at the Base of the Left Frontal Convolution, with Autopsy, in Which the Only Localizing Symptom Was Agraphia, Uncombined with Any Form of Aphasia." Dr. Gordinier's paper was discussed by Dr. Ward.

Dr. Stillman presented a paper upon the " History of Tuberculosis." Dr. Stillman's paper was discussed by Drs. Mereness, Hun and Vander Veer.

THIRD PAN-AMERICAN MEDICAL CONGRESS. — The Congress has been postponed from December, 1899, to December, 1900, in accordance with a letter from Dr. Jose Manuel de los Rios, the President of the Congress, stating that distractions incident upon war and epidemic in Venezuela have been so pronounced that an attempt to carry out the Congress at the date agreed upon would result unfavorably to its success. Notices to this effect have been published by the secretary of the International Executive Committee, Dr. Charles A. L. Reed, of Cincinnati.

STATE OF NEW YORK — CIVIL SERVICE EXAMINATIONS. — Open competitive merit examinations will be held December 10, 1898, in Albany, Binghamton, Buffalo, Elmira, New York, Rochester, Syracuse and Utica for the following named positions:

Junior Physician and Resident Physician at the State Industrial School, Rochester.

The examinations in any city may be abandoned unless there are at least five accepted applicants in or near such city.

Intending competitors must file applications in the office of the Civil Service Commission at least five days before the examination. For particulars and application blank, address Secretary, New York Civil Service Commission, Albany, N. Y.

ALBANY HOSPITAL TRAINING SCHOOL FOR NURSES. — The annual meeting of the Patronesses was held at the Hospital on November 7th, 1898. The report of the treasurer, Miss Lansing, showed that the expenses have been a little over $7,000, and the receipts from all sources about $7,200. Acknowledgment of a gift of $5,000 from Mrs. D. M. Douw, to be used toward the building of a nurses' house in connection with the new hospital, was made.

The report of the superintendent of the Training School, Miss Emily MacDonnell, stated that there were enrolled 4 head (graduate) nurses, 23 pupils and 4 probationers. During the year the pupils have had the advantages of training in the care of children at the Child's Hospital, and in obstetrics at the House of Shelter. Opportunities have also been given by the Albany Guild for the Care of the Sick Poor in the work of district nursing. It is desired to increase the number of patronesses. The present number is 54, and it is hoped that 75 may soon be enrolled.

The managers are: Mrs. W. L. Learned, President; Mrs. Frederic Townsend, Vice-President; Mrs. Tucker, Secretary; Miss Abby Spencer Lansing, Treasurer; Mrs. B. W. Arnold, Mrs. Samuel Hand, Mrs. Edward R. Hun, Mrs. Charles R. Knowles, Miss Myers, Miss Potts, Mrs. J. W. Tillinghast, Mrs. A. Vander Veer.

The Albany Hospital Bazar. — The bazar in aid of the new Hospital is to be held at Harmanus Bleecker Hall during the week beginning December 12th.

Philadelphia High School for Girls. — In this school a medical department has been organized, under the direction of Dr. Katharine Kollock, a member of the faculty. In addition to the surgical and medical equipment, the department is furnished with rolling chairs and couches, and a wardrobe of skirts and other clothing for the rainy day use of students, who are thereby provided with dry attire as soon as they arrive at school, their own clothes being dried before the session is ended.

Students who complain of illness, or whose appearance indicates that they are in need of medical attention, are immediately sent to Dr. Kollock. A record is kept of each case, and on an average about twenty students are daily under the physician's care. Among the cases treated by Dr. Kollock this year were dislocations of the shoulder, fractures and other accidents requiring surgical treatment.

All the drinking water is filtered, and the drinking cups are scalded every day, while the desks, blackboards, staircase balusters, clothes racks and other furniture are washed with disinfectants every day.

Personal. — Dr. Roy L. Leak (A. M. C., 1895) has been appointed medical interne at the St. Lawrence State Hospital, Ogdensburg, N. Y.

— Major Lewis Balch, who has been on duty with the Second N. Y. Regiment during the war with Spain, has been appointed Brigade Surgeon, United States Volunteers, and has been ordered to proceed to Meadville, Pa., for duty as Chief Surgeon, Second Brigade, Second Division, Second Army Corps.

Married: Guyer — Dennison. — At Albany, N. Y., September 24, 1898, Dr. Frederick N. Guyer (A. M. C., 1897) and Miss Elizabeth S. Dennison. Dr. and Mrs. Guyer will reside in Albany.

Book Reviews.

Brief Essays on Orthopædic Surgery. By NEWTON M. SHAFFER, Surgeon-in-Chief to the N. Y. Orthopædic Dispensary and Hospital, etc. New York: D. Appleton & Co.

The author in this excellent little volume of reprints traces the history of orthopædic surgery, and especially of the work in the New York Orthopædic Hospital. He believes that orthopædic surgery is a distinct specialty, and defines it as "that department of general surgery which includes the prevention, the mechanical and the operative treatment of chronic and progressive deformities, for the proper treatment of which special forms of apparatus or special mechanical dressings are necessary." This would exclude many operations such as those for hair-lip, spina bifida, etcetera, and even the excision of joints or amputations for incurable deformities; all of which he would turn over to the general surgeon. H. J. L.

The Medical Society of the County of St. Lawrence. Annual Report, May 17, 1898.

The ANNALS has previously (July, 1897) directed attention to the custom of the St. Lawrence County Medical Society of publishing in pamphlet form the reports of its meetings. This plan was adopted in order to maintain the interest of the members of the society, who, from the difficulty of attendance arising from inconveniences of railway communication, are often unable to be present, and the ANNALS then commented favorably upon and predicted a successful result of this practice. This has been verified, and in the fasciculus now before us a goodly degree of activity is recorded. This must in great part be attributed to the perseverance of Dr. Close, for many years the secretary of the society, who has been untiring in the work of promoting its interests. The present report contains papers upon "The Examination of the Insane for Commitment to an Institution," by Dr. Wm. Mabon, medical superintendent of the St. Lawrence State Hospital; "The Use of Cold in Pyrexia," by Dr. Frank J. Fuller, of Potsdam; "Acetanelid," by Dr. B. F. Drury, of Gouverneur; "The Treatment of Lobar Pneumonia," by Dr. W. B. Hanbidge, of Ogdensburg; and biographical sketches of the late Dr. B. F. Sherman, by Dr. E. H. Bridges, of Ogdensburg, and Dr. John Preston, by Dr. P. H. Shea, of Canton.

The officers of the society for the current year are: President, Dr. D. M. Taylor; Vice-President, Dr. W. L. Babcock; Secretary, Dr. S. W. Close; Treasurer, Dr. [illegible] S. Raymond; Censors, Drs. Jesse Reynolds, E. H. Bridges and Wm. Mabon; Delegate to the Medical Society of the State of New York, Dr. Wm. Mabon.

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